

SALTBUSH IN ARID AUSTRALIA

No Known Plant Better for Sheep Fodder

Saltbush, despised and rejected by painters and even by some pastoralists, is one of the principal assets of Australia, according to Prof. T. G. B. Osborn, D.Sc., Professor of Botany at Adelaide University.

"No known plants are so well suited for fodder in the arid areas as the natural and peculiarly Australian saltbush flora," he said.

"It has a marvellous capacity for resisting drought, and through its leaves can take advantage of every drop of water, a valuable quality in a country where rainfalls are few and scanty. In Australia 37 per cent. of the continent receives less than 10 inches of rain a year. In South Australia five-sixths of the total area of the State is arid.

"These areas cannot be used for the growth of crops, but they make suitable grazing lands. The bulk of the occupied arid parts of Australia has been given over to pastoralists, who make use of native vegetation. Therefore the continued prosperity of one of the most important industries of Australia depends almost entirely on the continuation of the native plant life in these arid regions.

"Although these lands do not suffer from poverty of soil their fertility is restricted by lack of water. While at times there may be an abundance of grasses, these cannot weather a drought, as the hardy saltbush can. Some pastoralists advocate the destruction of the saltbush, as they hold that the grasses grow better in its absence.

"Grasses grow well after rain, but if there is a prolonged dry spell they wither away and disappear. Consequently during a drought there is neither fodder for the stock nor anything to bind the soil.

Prevents Drift

"In addition to performing its primary function of providing a permanent supply of fodder, saltbush holds the soil during dry periods and prevents drift. Without it an arid region tends to become a stretch of bare rock or shifting sand.

"Plants in these regions are specially suited to withstand severe conditions of intense light, extremes of heat and cold, and low rainfall. Salt has the property of taking moisture from damp air. Saltbush greedily absorbs salt from the soil, so that through its leaves it can utilise

rainfalls of a few points and even dews. Moreover, its leaves have highly nutritious properties which make it excellent for grazing purposes. This also applies to bluebush, although in a modified degree.

"Hardly though the saltbush is, there are limits to its endurance. The native plant forms were evolved long before the advent of white settlement. In their natural state they never knew the effect of close grazing animals. Now, owing to grazing, they have to withstand not only the weakening effects of stock feeding upon them, and of trampling by herds of large animals, but also a reduction in seed. This is seen not only in the reduction of the actual amount of seed formed due to eating of the fruit and seeds, but in the reduction of the seedling.

Artificial Desert

"All practical men know the effects of grazing, which can be seen near any fence or trough, but their significance is not always recognised. Briefly, the effects are that the more valuable plants are eaten out or destroyed. At the same time various less palatable plants become more abundant. These are generally native species in the arid areas, poor relations as it were, of the more important fodder plants.

"South Australia has a striking example of this in the prevalence of bindyi or copperburrs as a result of overgrazing. Eventually, even these may disappear, bare soil is left, and drift begins. The final stage can be described only as an artificial desert."

Prof. Osborn is engaged on studying how far the grazing industry has affected the natural vegetation of the arid country. He has found that apparently a certain amount of injury to the natural plant communities of Australia is inevitable on account of the occupation of the country, but it is not yet clear how much grazing the vegetation can tolerate without being destroyed.

To ascertain the extent to which grazing has modified the natural flora can be done only by enclosing an area of typical country and keeping it under observation for some years. Prof. Osborn has been given facilities for this investigation by Hamilton, Wilcox, Limited, who have given Adelaide University an area of 1,500 acres, with a vermin-proof fence. It is known as the Koonamore Vegetation Reserve. A field laboratory has been built by the donors, and has been equipped by the University. This is the first of its kind in Australia.

Work was begun this year on a typical piece of overgrazed saltbush and bluebush country. The regeneration of the natural flora is being studied by means of detailed surveys of selected spots at regular intervals. Soil analysis and photographs are used in conjunction with maps which show the position of every plant. The work also includes observations on the physiology, soil requirements, and reproduction of all the valuable fodder plants.

As the work develops it is intended to conduct grazing tests on selected plots, and in this way to build a body of scientific data to serve as a guide to the pastoralist. Observations on this area should do much to solve problems of primary importance to the pastoral industry. Prof. Osborn expects that it will take 15 years to complete the work.

Money for Research

Mr. Samuel Dixon, who was one of the pioneer pastoralists, has been interested in the subject for many years. He has formulated a scheme for the preservation of the native vegetation.

At the next meeting of the Royal Society he proposes to ask that £250 be granted for the discovery of accurate methods of reproducing and regenerating the natural fodder plants, especially in the arid regions.

He hopes this will pave the way for the inauguration of a movement in all the States of the Commonwealth dependent on natural fodder plants. This should result in legislative action to give tenures long enough to induce lessees of Crown leaseholds to cultivate and protect as much as possible of the native fodder plants belonging to their respective localities.

Mr. Dixon believes that if this policy were maintained for a number of years not only would it make up the deficiency of 20,000,000 sheep, but that it would result in areas unstocked becoming remunerative.

Interstate Conference.

International Law.

Professor A. L. Campbell, B.A., B.E., gave an address on "International Law." He said the function of a justice was more than judicial. Historically he was the head of the community, the guardian of peace, order, and good government. Today he occupied a similar position, and, by virtue of his office and his qualifications, he played a great part in directing public opinion. With regard to international law it was objected by many that there was actually no such thing. The memory of incidents of 10 years ago might cause one to be pardoned for entertaining such doubts. But it did not follow that, because the law was immediately unenforceable or that crimes were being committed, the law did not exist. The objection to the existence of international law rested on the absence of police force or sanctions. But the mere fact that nations not immediately threatened went to war to preserve the rights of others proved that some sanction did exist, although it might be undefined. It was true there was no lawmaking body to prescribe laws for the States, nor was any definite penalty prescribed. Still there were established rules of law resting on the law of nature, as it was called; in other words on equity and good conscience, which, in the words of Gladstone, "constituted a great and noble monument to human wisdom, evolved from the combined dictates of experience, the precious inheritance bequeathed to us by generations that had gone before." If that were true before the war it was certainly more true now, with the establishment of the League of Nations, the permanent Court of International Justice, and the subsidiary organizations under the League. It was too late now to deny that there was a body of rules acknowledged by every civilized State; rules such that failure to observe them would call down on the State not only moral censure, but, if necessary, economic penalties, or, finally, war. Professor Campbell said that if those rules were so enforceable, it must be admitted that the body of international law did exist. As to the position of Australia prior to the war, the component parts of the Empire had no legal status in international affairs. They were compelled to conduct all their negotiations through London. The war, however, led to their recognition as important actors in the affairs of the world. Finally, their position as signatories to the Peace Treaty, and as full members of the League of Nations, invested them with a status up to that point unrecognized at least by foreign nations. Exactly what that status was in point of law, it was difficult and almost impossible at the present stage to define. But the fact remained that the dominions were now able to express opinions direct to other nations, and that obtained even in opposition to Great Britain, as had often occurred in the League. Therefore if we were to fill our place effectively in the councils of the world we must concern ourselves with the study of international law, particularly so as machinery was now available in the permanent Court to test many questions to which Australia might well be a party. There was the question of the mandates, which was due to become prominent very shortly, owing to the new position of Germany. That country had never surrendered her claim to colonies or mandates, and it would be surprising if she did not seize an early opportunity, either to criticise Australia's administration, or to claim a share in the control. They must therefore understand clearly their legal position in relation to the matter, and not only study the documents on which the mandate rested, but be prepared to discuss on a legal basis what were their rights and liabilities. Similarly, in connection with other international organizations, they were being asked from time to time to recognise as part of their domestic law, conventions arrived at by all the civilized nations in conference. Thus international law was becoming more allied to their domestic law, and it was difficult to say how far this influence might extend. Foreign nations, recognising the dominions as standing on their own feet, were more apt to deal directly with them, to claim concessions, and to offer concession in return. It might be that the time would come when the dominions themselves would secure direct representation at the seats of government of foreign Powers. Already they saw it in the appointment of the Canadian Minister at Washington, and it was a well-known fact that Australia, itself, although happily not as yet claiming any foreign representation, was in much closer touch with the British Foreign Office and Cabinet than she ever was before. Imperial conferences in London seemed at present to be sufficient to safeguard Australian interests abroad, but even there it must be assumed that the voice of Australia was heard indirectly in foreign politics and in international affairs. Hence their duty was to familiarise themselves, as far as possible, with all details of international law and politics, in order that they might properly direct their representations on those occasions, and in order that they might, if, and when approached by foreign Powers, enter into negotiations with the full and complete understanding of the significance of their position.

Justice of the British.

Mr. E. W. Hawker, M.A., read a paper on "The characterization of races as it affects the execution of justice." He attributed the great advancement of South Australia since it was first settled to the racial characteristics of the pioneers. Representing the fusion of races with like characteristics, the English had acquired common sentiments, interests, and beliefs, in contrast, for instance, with the French. This was shown in the relative stability of the English Parliament. Furthermore, the English had inherited the spirit of adventure from their Nordic ancestors, the love of truth, honour, and justice, and a high standard of morality. Parents and teachers could successfully appeal to a sense of honour and justice in children, and right through life cheating was looked upon with contempt. Among other characteristics the English had courage and individuality, the latter especially developed. That individualism made them less sociable than men of other races, but it had helped them to create the British Empire by colonizing out-of-the-way places. It enabled young Englishmen to fill important positions among coloured people. The judges of the British Empire were held in high estimation. The "pick" of the legal profession, they were independent of politics, and their honesty was never doubted. Mr. Hawker said that he had been very much struck when in America in 1892 by the value of the British method of appointing Judges for life from the legal profession, compared with the American method of electing State Judges. As he was entering a Court he heard a man ask another, "What about the Judge?" The reply was, "Thank God, he is straight." One could not conceive such a question being asked about a Judge in the British Dominions. The same applied to Magistrates. There was a great difference in the way a man arrested for a crime was treated by the police in British dominions, and in France and even in America. In the two latter countries an attempt was made to extort from the prisoner by the "third degree" evidence which would incriminate him. In the British dominions the accused was warned when arrested that any statement made by him might be used against him. "Will this high standard of morality continue?" the speaker asked. "Are there not already signs among the people that the love of fair play is being weakened?" He instanced arbitration awards, and declared that although the employees were in favour of arbitration, they would not in many cases abide by awards which did not suit them, though the employers have to obey them. They were beginning to lose their respect for the rights of a bargain. Broken Hill had long been noted as a hotbed for industrial troubles. The instigators of the strikes there were as a rule not of the British race, but came from countries where there was neither liberty of action nor of speech. Unfortunately the British workman was too ready to listen to sowers of dissension. It was necessary to continue to inculcate British ideals in the minds of the young, and to exercise the greatest care in admitting migrants. Those who were likely to cause dissension and who had not British characteristics should be rigorously excluded.

Conservatorium Social

The third social to be given in connection with the Elder Conservatorium will take place on Monday evening, October 18, in Elder Hall. This social will be a welcome home to Mr. F. Baya (president of the association).

The musical programme has been arranged by Madame Delmar Hall and will consist of concerted vocal items, including a song cycle entitled "The Mountebanks" by Easthope Martin (for the first time in Australia). Artists will be Madame Delmar Hall, Miss Gladys Michie, Miss Alice Meezau (at the piano), Mr. Fred Williamson, and Mr. Clive Carey. The general public will be admitted to the concert on payment of 1/ at the doors.

Madame Delmar Hall will not give a charity concert this season owing to there having been so many concerts, charitable and otherwise, but hopes to give one next year.

The Bank of Adelaide announces an interim dividend at the rate of 10 per cent. per annum to be paid on November 10. The following scholarships, tenable at the Elder Conservatorium for three years, are offered for competition. An Elder scholarship for singing, and a Eugene Alderman scholarship for either violin, violoncello, pianoforte, organ, or singing, and of the annual value of £18 10/. The examination will be held in November, and candidates must enter before October 30. Further information will be found in our advertising columns, or upon application to the Registrar of the University.

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EFFECT OF LIGHT ON THE SKIN.

Before the anthropological section of the British Association gathering at Oxford recently, Dr. J. H. Saxby held an audience spellbound while he described experiments in his laboratory on the relation of skin and light. Out of the paradox that, while the white man wears white clothes to avoid the heat, Nature has provided the native of the tropics with a black skin, he deduced the principle that an overdose of ultra-violet rays itself provided the protection which rendered the skin immune. Experiments with Europeans and negroes had shown that in fact the native did not differ fundamentally in tint, but was merely a super-brunette, and that Europeans, who were bleached negroes, varied from 70 per cent. down to 20 per cent. in the pinkness of their skins. In an experiment on himself he had discovered that with repeated overdoses of ultra-violet rays the skin of his arm became very inflamed, but that this gave place after a time to deep sunburn, which provided ample protection against further hurt.

Dr. Brian F. Moore left Adelaide for London on Wednesday. He intends to make a special study of the eye, and will be absent for 14 months.