

## Social and Economic Conditions of West Australian Aborigines

THE report of a Commission of Inquiry on social and economic conditions among the aborigines of West Australia and the working of the State system of protection, which was published on March 12 last, criticises strongly the inadequacy of the provision for medical attention, the inefficiency of the care for half-castes and the wasteful and unsatisfactory character of the management of the Moore River settlement. The Commissioner, Mr. H. D. Moseley, is doubtful of the success of the missions among the aborigines; and he finds that allegations of cruelty and ill-treatment of the aborigines, which have appeared in the public Press from 1930 onward, are without foundation.

In the north and north-west, natives on pastoral properties, the Commissioner reports, experience conditions which as nearly as possible approach their natural life. The work of the aborigines employed on stations takes an appropriate form, and the only criticism of the Government stations is that a greater effort should be made to keep the aborigines more constantly employed. The 'bush' natives are best left alone; and the land now occupied by them should be secured inalienably as a reserve and additional land should be set aside for reserve purposes in anticipation of closer white settlement in the northern area. The native is under no hardship through the non-payment of wages; and there is nothing approaching a condition of slavery. In the north-west, where the wage system has been in operation for some time, it has encouraged the gambling and squandering habits of the aboriginal.

To meet the inadequacy of the present medical attention available, the establishment of clinics and hospitals is recommended at four points to facilitate early diagnosis and treatment. Farther south, in the areas of closer settlement, increased hospital accommodation is recommended, the existing accommodation being both inadequate and undesirable in character. In addition to providing first-aid stores, employers of labour should be required to make payment into a medical fund on account of each employee; and in this connexion the present system of licenses for labour is criticised, as it does not require particulars of individual employees to be reported, but merely the total number employed. A system of registration is therefore recommended.

In dealing with leprosy, the inadequacy of the provision for segregation of detected cases awaiting transhipment to the leper hospital at Darwin, and the delay in evacuation are strongly criticised. It is suggested that the State should withdraw from the arrangement whereby leprosy is made a Federal

concern and provide a leprosarium of its own on one of the islands off the coast; but if this is impossible, that suitable arrangements should be made for isolating detected cases, while the inspection for leprosy and venereal disease, for which agitation has been going on since 1924, should be held forthwith.

If conditions in the sparsely settled north and north-west can be regarded as satisfactory on the whole, except as regards the medical question, it is far otherwise in the more closely settled south, where the aboriginal has come more closely into contact with white civilisation, and native camps are situated in close proximity to the towns. In the Moore River settlement, children and young persons are being educated and trained in close proximity to the camps for indigent aborigines, without proper measures being taken to keep them apart; hence most undesirable results, especially as affecting young girls. The buildings are inadequate, verminous and inefficient, and proper educational equipment is lacking. The care of half-castes is thoroughly inefficient and inoperative. So far as possible, camps should not be allowed to remain near the towns. It is recommended for both able-bodied aborigines and half-castes that a system of farm-stations should be established on which adults and parents could work on their own allotments, while the children were trained for suitable occupations. An extension of the existing arrangements for the training of girls for service and other occupations is also recommended.

In regard to the laws affecting aborigines, the most important measure suggested is the provision of special courts for the trial of 'bush' natives, in which the proceedings would be suited to the code of the native and such as he himself and the members of his tribe would understand. The holding of such courts might be part of the duties of a district protector on patrol.

It is pointed out how far the criticism of existing conditions is concerned with matters which can be attributed to the defects of the present organisation of protection, whereby the Chief Protector, assisted by more than a hundred honorary protectors, who do not function except to grant permits to employ labour, has been overburdened with office work and has been unable to travel and inspect actual conditions. A reorganisation is recommended in which the office of Chief Protector should be abolished, and his place taken by a secretary of the Department, who would be responsible for office detail, while the active work of protection would be in the hands of district protectors, of whom one, a medical man, should be appointed to the northern area forthwith.

## The Collection of Dew

By H. E. BECKETT and A. F. DUFTON

ARISING from the serious shortage of water in many districts during the summers of 1933 and 1934, the suggestion was made that the collection of dew would be profitable and that research should be undertaken into the economic design of dew-ponds. A little consideration showed that certain types of roofs, suitably insulated underneath, might act as economical and efficient collectors of dew.

If 'dew ponds' really do collect dew owing to the

cooling either of the water surface or of the surrounding banks below the dew point, by radiation to the night sky, even more dew should be collected on a thin metal roof of low thermal capacity, provided that the roof has an efficient radiating surface and is prevented from gaining heat from below.

In order to find whether sufficiently low temperatures could be obtained on thin metal sheets and to what extent these temperatures were affected by

surface treatments of the sheets and by the amount of insulation beneath them, four galvanised iron sheets, measuring 4 ft. 3 in. square, were supported off the ground and exposed out of doors at the Building Research Station. One sheet was left plain, another was formed into a shallow tank and filled to a depth of 1 in. with water; the two remaining sheets were whitewashed on the upper surface and one was provided with 7 in. of cork insulation underneath.

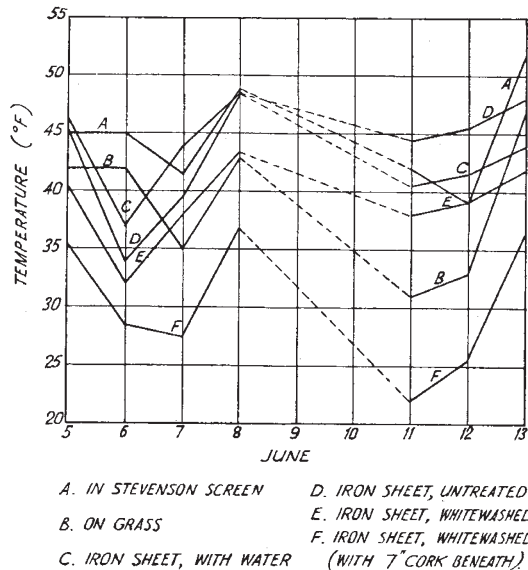


FIG. 1. Minimum temperatures.

Each sheet was provided with a thermocouple by means of which its temperature was recorded. The minimum temperatures recorded on a number of nights in June are shown in Fig. 1. It will be seen that the specimen which was whitewashed on top, to reflect the sun's heat by day and to radiate heat by night, and was heavily insulated beneath with cork, became appreciably colder than any of the other specimens, the lowest temperature recorded being 22° F., 20° F. below the screen minimum for the night.

The next step was to experiment on a larger scale with an actual roof, to find how much dew could be collected. For this purpose a section of a corrugated iron roof, 18 ft. 7 in. long by 11 ft. wide and having a pitch of 7½°, was provided with separate drainage. The roof was insulated underneath with two sheets of aluminium-faced asbestos paper, spaced 1 in. apart, the equivalent of about 1 in. of cork, and was whitewashed on top. The temperature of the iron sheets was recorded by means of a thermocouple.

Measurements were made on this roof on suitable clear nights from July to September, but the results were disappointing. Dew *could* be collected on nights most favourable for the loss of heat by radiation, but suitable nights were by no means frequent, and, even then, the amount of dew collected was small. A typical record is given below.

Minimum roof temperature . . . . .	28° F.
Minimum screen temperature . . . . .	36½° F.
Grass minimum . . . . .	29° F.
Minimum temperature on bituminous felt on adjacent flat roof with 7 in. of slag-wool insulation underneath . . . . .	25½° F.
Dew collected . . . . .	70 cu. in.

The quart of water which is obtained on a night when the sky is propitious is a mere dribble compared with the 10 gallons which the same roof collects during 1/10 inch of rainfall, and it is obvious that, as an auxiliary water-supply during drought, the collection of dew in this way cannot be seriously considered. Storage for rain water is more economical to instal, more reliable and altogether more practicable.

From the experiments described above, it may also be inferred that the action of 'dew-ponds' cannot be ascribed to the ordinary deposition of dew. This corroborates the findings of E. A. Martin<sup>1</sup>, who as a result of an extensive study, decided that the ponds depend for their replenishment upon mists rather than dew and that the term 'dew-pond' is a misnomer. According to Martin, the word 'dew-pond' does not appear to have been used prior to 1813 ("The Shorter Oxford English Dictionary" gives the date 1877) and, since then, although some ponds have borne that name, others have been known as 'cloud-ponds', 'mist-ponds' or 'fog-ponds'.

<sup>1</sup> E. A. Martin, "Dew-Ponds". T. Werner Laurie, Ltd., London, 1911.

## Sylvicultural Research in Nigeria

SINCE the appointment of two sylviculturists for research in Nigeria in 1928, a remarkable amount of good work has been undertaken in connexion with the rain and moist deciduous forests in the south-western provinces. In the *Oxford Forestry Memoirs*, No. 18 (Oxford, The Clarendon Press; 1934), Mr. W. D. MacGregor, one of the sylviculturists, publishes an account of his work in a brochure entitled "Sylviculture of the Mixed Deciduous Forests of Nigeria, with Special Reference to the South-Western Provinces".

The mixed deciduous forest type in West Africa is an important concomitant of the forest flora, coming between the true deciduous and the true evergreen forest types. Botanically it includes high forest trees of both types, but differs from the deciduous forest in containing evergreen under

canopies, and from the evergreen or rain forest in containing top canopies of deciduous trees.

From the forester's point of view, the mixed deciduous forest type is nearer to the deciduous than to the rain forest type. It is in reality a climatic formation in which deciduous trees attain their optimum development. In its most humid form, the mixed deciduous merges imperceptibly into the rain forest type. It requires a rainfall averaging 50-70 inches per annum.

Of the numerous natural orders of this forest type, *Sterculiaceae*, *Leguminosae*, *Moraceae* and *Combretaceae* are the most important. The two magnificent trees *Triplochiton scleroxylon* and *Chlorophora excelsa* have the greatest range in distribution.

With the evergreen forests to the south and the deciduous forests to the north, the mixed deciduous