THE WANNEROO DISTRICT.

The following report by Mr. A. Despeissis, the Viticultural and Horticultural Expert of the Department, was sent to the Hon. the Minister for Lands for his information :—

"I beg to report on a short visit I made on the 15th and 16th to a portion of the Wanneroo District. On a previous occasion, towards the end of May, I had an opportunity of visiting another portion of the district. These visits were made at the instigation of the Wanneroo Farmers and Gardeners' Association.

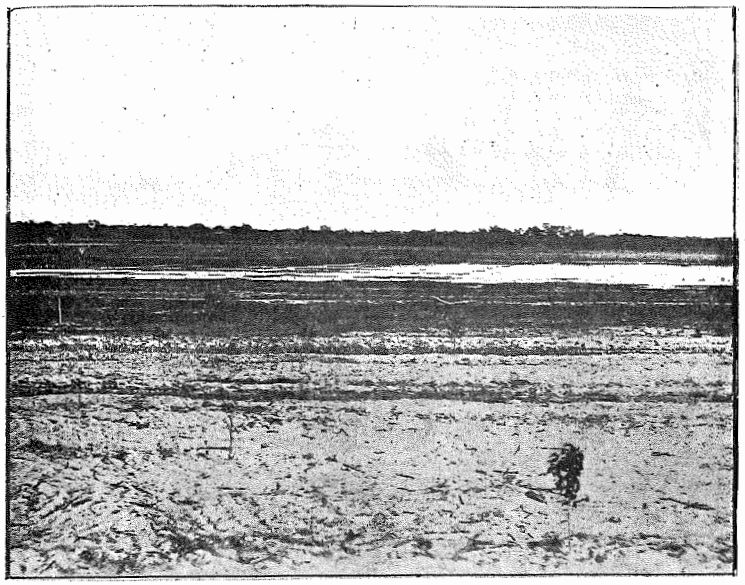
"The capabilities of the district have only of late attracted some degree of attention. Although it adjoins the metropolitan area, the bar to its settlement has hitherto been the absence of made roads; the hauling of produce, owing to the undulating nature of the country, which is mostly of a sandy nature, being particularly heavy. A long, narrow block road is, however, now being constructed, and extends to a point 15½ miles North of Perth. It has already served to open up a large stretch of country. Provision has been made for the further lengthening of this main artery, and it is proposed to also construct a branch road leading from the vicinity of the 16-mile post towards Lake Pinjar, some five miles further on in a north-east direction.

"These extensions will tap two large and valuable pieces of unalienated land, which are well adapted for close settlement and extensive cultivation, viz., the reserve to the westward of Lake Mariginup and the more capacious one including Lake Pinjar.

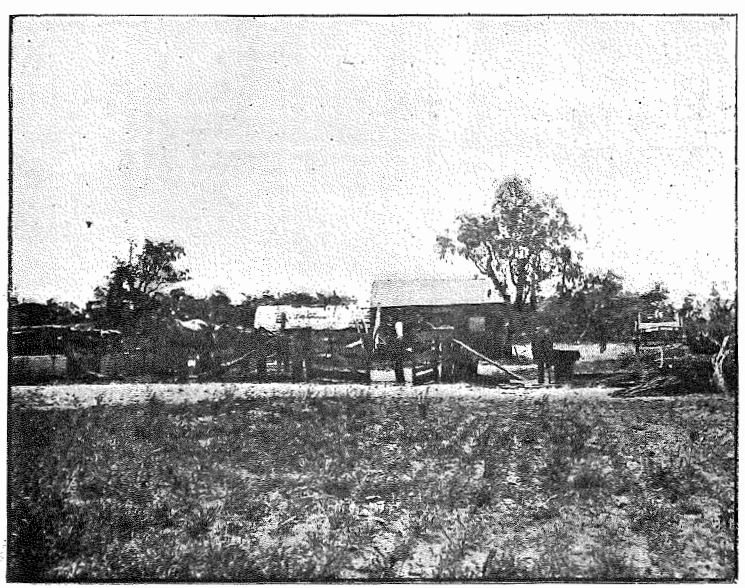
"The bulk of the country visited is of a sandy nature, and is low under banksia and stunted jarrah, with tuart gum wherever the coastal limestone formation outcrops.

"Now and again patches of swamp land break the monotony of the sand stretches; most of these have been taken up, and several have of late been partly brought under cultivation. They consist of circular or of oblong depressions, which in the wet winter months are mostly under water, and at present they are only used for summer cultivation. If drained, the period they are susceptible of being cropped could be much lengthened; but by reason of the configuration of the country, drainage would in many cases prove costly, and as one swamp could only be reclaimed at the cost of another this method would interfere with vested interests, and would not be applicable to the majority of the swamps in the locality.

"Hitherto, bulky garden crops and some patches of potatoes have been the only produce raised for marketing; the heavy cost of haulage and the time involved in carting the stuff to Perth have militated against more extensive cultivation.



Lake Coogee.



A Pioneer's Farm Yard (Lake Pinjar).

"As a rule, the settlers occupy more swampy land than they can cultivate during the season, and, as a consequence, large stretches of moist land susceptible of carrying crops are left unproductive and unreclaimed.

"Much good work has, in the face of the difficulties encountered in marketing produce, been achieved by those already on the land; they however recognise that the progress of the district chiefly depends on settlement, and recognise that its best interests would be safeguarded by limiting the area susceptible of being selected to smaller blocks.

"This, in connection with the two reserves already referred to, viz., those around Lake Mariginup and Lake Pinjar, offer special features for close settlement. They are of good size and comprise a large area of good land, abundantly watered.

"Lake Mariginup, one of the few deep water lakes of the locality, is particularly picturesque. It is oval in shape, one mile long by three-quarters of a mile wide. The water is quite fresh and apparently suitable for stocking with fish. It is only 17 miles from Perth and comparatively easy of access. The land surrounding it is a deep sandy loam, dark in colour, moist, and supports trees of large size, chiefly banksia, red gum, jarrah, tuart gum, blue or flooded gum, blackboys and paper bark.

"A couple of miles to the North of Lake Mariginup the track runs along the margin of Lake Coogee, which presents features common with many of the so-called lakes of the district. There the work of reclaiming the swamp has been taken in hand for some time, and the land has proved itself to be well suited for the cultivation of maize and other fodder plants, as well also as for potatoes and vegetables.

"Lake Pinjar is situated three miles to the north of Lake Coogee, or five miles from Lake Mariginup. It is a lake only by courtesy, as water never lies to any depth on it. The lake and the land in its vicinity offer special features for establishing a prosperous agricultural settlement. It is 24 miles from Perth, and seven miles, in a straight line, from the coast. In shape it is oblong, being six miles long and one mile and a half wide. The bottom of the swamp is firm enough to carry horses and implements at almost any time. The soil is of a peaty nature, and there are evidences of it having caught fire and smouldered in places when dry and spongy in the summer.

"This peaty stuff lies over a sandy bottom. I have not been able to ascertain whether there is a hard-pan underneath, as is evidenced in some of the swamps I have visited; but some of the settlers who have fenced off portions of the swamp land have informed me that when digging to a depth of about three feet for setting up corner posts, they did not strike any hard-pan. Such an impervious bed, however, must be present at some depth which remains to be ascertained.

"During a wet winter, the margin of the lake is an inch or two under water. Soft rushes grow over the whole surface, and bull rushes in a few isolated places. Here and there, small knobs covered with paper bark trees, gum trees, and blackboys stand out like so many islets upon the flat swamp, which is evenly graded, and dips about three feet from the margin to the lowest point of the trough or shallow depressions along the axis of the lake.

"On the eastern side fresh water springs now and again surge out of the ground, and that water feeds the swamp, where it spreads out over a large surface, and is lost by evaporation and by percolation.

"The margin of the lake consists of rich, damp, sandy loam, supporting a thick growth of gigantic blackboys, paper bark, red gums, tuart gums, and stunted jarrah. That zone varies in width from 20 to 25 chains.

"On the western side, there is less of this rich sand, the country being more broken, and consisting of limestone hills, which run parallel with the coast line. Well sheltered spots, suitable for vine and fruit-growing, are found on that side.

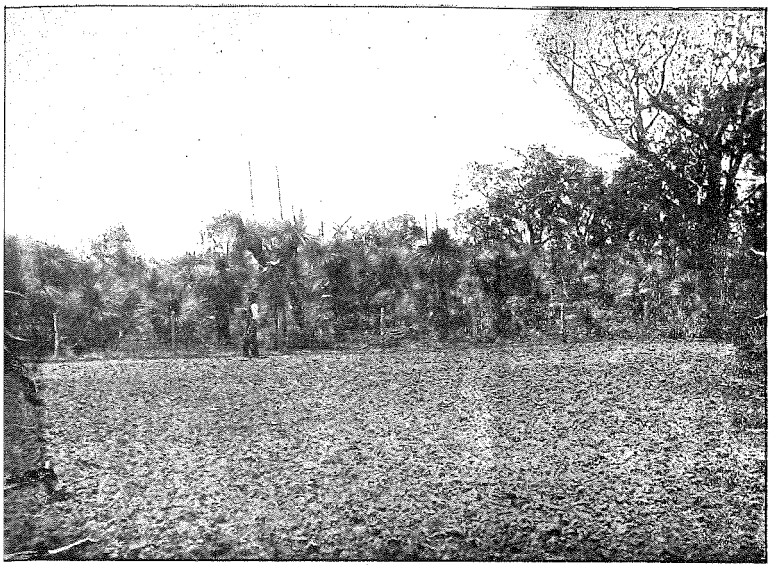
"In its present unreclaimed state, cattle do not do well when depastured without a break all the year round on that country, and become what is locally known as "coasty." When so affected, a change of pasture a few miles to the eastward, in the direction of the Swan and the hills, soon restores them to health. This affection appears to be one caused by excess of some substance contained in the native scrub which these cattle feed on, or to deficiency of some mineral salts essential to the well being of the animals. It is a fact worth noting that cattle which receive a supplementary ration or have access to the more succulent cultivated crops show no signs of wasting and debility.

"Pigs do remarkably well when turned out. Some which are foraging for themselves and are never artificially fed, keep in good condition and occasionally come up to the farmyard.

"I was shown some splendid crops of potatoes and rye. Fruit trees, more especially apples and Japanese plums, planted a few years ago, are growing with great luxuriance, and so do grape vines. I also saw test plots of white clover, Paspalum grass, millet and sorghum, which give evidence of doing well.

"The locality offers every promise of one susceptible of developing into a thriving dairy centre. Bulky crops of fodder can be grown in the winter, on the higher sandy loam around the lake, and in the summer months on the swamp itself. The surplus of these, cured at a small cost into ensilage could yield an abundance of nutritious fodder for feeding a large number of pigs and cattle. The application of phosphatic fertiliser helps the crops greatly on the newly turned land.

"By limiting the acreage susceptible of being selected to as much as a family could well cultivate, a score or more of farms could



Black-boy thicket and land recently cleared at Lake Pinjar.

Paper-bark thicket and land recently cleared at Lake Pinjar.

be carved out in the country now unproductive, and lead to the establishing of creameries, butter, cheese, and bacon factories.

"One feature of the locality which struck me greatly was the gigantic growth of blackboys (Grass Trees, *Xanthorrhœa*) around the lake, and I am told by the residents who have been out kangarooing over that country that thick jungles of them occur here and there for miles. A snapshot of one of these blackboy thickets I beg to attach to this report. Their growth varies from one to two feet in diameter, and their height from three feet to 18ft. A demand has of late sprung up for the resin yielded by the plant, and it appears that whilst this substance has for a long time been esteemed for the manufacture of varnish, it has lately been discovered that it is one from which picric acid can with comparative ease and with profit be manufactured. The agricultural Chemist of the Department is at present engaged conducting an investigation on this substance, which there is reason to believe will be in large demand for the manufacture of the powerful explosives which of late have, in many cases, supplemented gunpowder.

"I am given to understand that the extraction of that resin occupies a number of men on Kangaroo Island, on the coast of South Australia, and should it be so, there is every indication that the profit derived from extracting the resinous matter from blackboys, such as occur around the district visited, will, to a great extent, pay for the clearing of the land and prepare it for the cultivation of crops and herbage and the raising of stock."

AGRICULTURAL LECTURES.

By A. Despeissis.

FOURTH LECTURE.

Tillage is one of the means we have of "unlocking" the unavailable elements of plant food in the ground and making them available for the crop.

It improves the physical condition or "texture" of the soil. Incidentally it favours "chemical reaction" in the soil as well as "biological conditions," which independently or severally exert a beneficial influence on vegetation. Tillage is best effected by means of ploughing, harrowing, rolling, and hoeing, to bring the ground to a proper state to receive the crop; to destroy weeds and loosen the soil, and maintain it in a good state of cultivation after the ground is under crop. Tillage or cultivation is spoken of as deep or shallow, according as the soil is loosened at a depth of 6in. or more, or only stirred two or three inches.