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# Some recent rural radio talks.

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# PLANTAGENET PEATY SAND

By F. E. RYAN, Agrostologist.

**VISITORS to the south coast appreciate the colourful bottlebrush growing along the flats and many ask why this land is not used for farming. The reason is that they are part of the Plantagenet peaty sand series and these are problem soil types. These soils are very acid, sandy and peaty, they are poorly drained and may even be under water during the winter months. They contain a mass of fibrous roots in the top 8 to 10in. and this fibrous material will not rot down even when fully cultivated. The sand is greasy and does not wet easily. Even after six inches of rain the soil may have a dry band ½in. below the surface even though there is a free water table five inches below.**

On the other hand, the area of Plantagenet peaty sand is estimated to be up to 200,000 acres in extent. It occurs on most farms in the South Coastal areas and in many cases is associated with higher lands suitable for winter grazing. It occurs in a rainfall area with from 36 to 60in. of rain per annum, and on some sections will remain moist through the whole of the summer period. It is land, therefore, which is worthy of further consideration.

In recent years a lot of experimental work has been carried out on this problem soil. Since it is acid in reaction, lime appears necessary. Very good responses to lime applications have been obtained and at Denmark where rates from 1 to 8 tons per acre were tried—1 ton was found to be as good as 8 tons. On most sites lime appears necessary but on some areas subterranean clover pastures have been established without the use of lime. Further work is being done at present to determine whether rates of lime less than 1 ton per acre can be used.

The soils lack phosphate and in most trials 4 cwt. per acre of superphosphate has been used in the first year. Copper appears to be lacking in these soils and there is some evidence to suggest that zinc is also lacking, although this appears to vary from place to place.

In common with most peaty soils, these areas are very low in available potash, and strong responses to applications of potash have been obtained. If extensive areas are developed they will undoubtedly need potash soon after they are developed if not in the first year.

A number of pasture plants have been tried. Yarloop subterranean clover succeeds very well and good results have been obtained with Tallarook subterranean clover. Areas which are liable to dry out in the summer time may not support per-

ennials but on much of the area strawberry clover and possibly white clover could be grown once the area had received an application of lime and trace elements.

In trials, subterranean, white strawberry, red and Alsike clovers, lupins and vetches have been grown. The most successful grasses so far tried have been kikuyu and phalaris.

To develop this country it is necessary to destroy many of the roots and fibres in the soil and cultivation methods have been tried. Rotary hoeing has not been very successful as it buries the roots and top growth if not burnt prior to cultivation. Disc ploughing has been more successful. The attempt must be to throw the land up into heavy clods to allow it to dry out and then fire it in an attempt to burn the top growth, roots and fibres which have been exposed. Another method is the use of rippers which tend to lift the roots and fibres to the surface where they may be burnt. If sufficient root material can be destroyed in this way it is much easier to prepare a seed-bed suitable for pasture establishment.

There are problems too of grazing management. Areas which were established many years ago using animal manure were found to revert quite quickly to an unproductive sod-bound Yorkshire fog sward. Methods of grazing and cutting in an attempt to overcome this problem are being tested.

You will have gathered from what I have said that we do not have all the answers to Plantagenet peaty sand but information is being collected, you will also realise that establishment on this land is neither easy nor cheap. It is important to know just how productive this country can be made before it will be clear whether development is an economical proposition. If you have in mind developing some of this land, make sure that it is fairly deep, i.e., coffee rock is not too close to the surface. It will need drainage and there must be some outlet for drainage water. Cultivation implements will be necessary to lift the roots and it may be two or even three years before it can be brought into production. If it is under production, careful grazing management will probably be necessary and in preparing the paddock it should be brought into a condition suitable for mowing as quickly as possible.

Plantagenet peaty sands present a challenge and we are still trying to find the answer.

# HIGHER GRAIN PRODUCTION

By H. M. FISHER, Agricultural Adviser.

**THERE is in evidence at the present time that, in the cereal areas, falls in returns from wool can best be offset by greater emphasis on cereal grain production. This is in fact an expression of the versatile nature of farming in these areas today.**

The question which is uppermost is "How can grain production be most profitably increased?" It is a question which is receiving a great deal of attention throughout Australia, not only in relation to more efficient and greater total production but towards improvement in "saleability" of grain produced. You have heard for instance that monies recently made available by the wheat industry and generously supported by the Commonwealth Government are at the present time being utilised by the Departments of Agriculture and other bodies in an exceedingly comprehensive probe into problems of wheat production and marketing.

It is intended in this brief talk to suggest a few of the aspects we might think about in our efforts towards a larger and more profitable harvest.

One question is of course "On what cereal should emphasis be placed?" The answer is governed as much if not more by the special virtues of various cereals in the farm programme as by the demand for them.

At the present time there is a satisfactory local and overseas market for all grains. Beecher barley and Ballidu oats in particular are increasing in popularity overseas. Wheat, however, with its higher price and assured market under stabilisation will no doubt be given preference in many areas.

Consideration must be given nevertheless to the possible embarrassment of large wheat stocks; the higher yielding ability of oats in wetter districts and their resistance to insect pests and fungal root-rots that can affect the yield of both wheat and barley; the suitability of barley for many areas of new light land and the dual-purpose nature of both oats and barley in providing sheep feed early in the season as well as harvested grain at the end. Furthermore, the advantage of oats sown dry and later grazed for weed control is something to bear in mind particularly where the available seeding period after opening rains is short.

Secondly, there is the aspect of land preparation. Although fallow remains a necessity to obtain good crop yields in the drier non-clover areas, it is a considerable cost against cropping. Not only is the actual cost of fallowing operations involved but the loss of grazing land for the 10 or 11 months of fallow must also be charged to this account. Where fallow can be eliminated without seriously affecting crop yields—and in the clover ley areas at least, this has been shown to be the case—then it obviously means very appreciable gains.

It has also been conclusively shown over the last few years that the plough with its superior weed control, is a much better machine than the scarifier for cultivation, particularly on clover ley land. With a plough it is possible to prepare in a single operation a seed bed completely free of weeds. This implies a principle which I believe is important and is worth remembering—the principle of effective weed control with the minimum number of operations. It could well be said that by making weed control the main object of cultivation for crops the other features of good tillage will be also largely achieved.

Thirdly there is the question of multiple cropping or sowing crops on the same area in successive years. Providing reasonable yields can be obtained from the second crop, this practice has the advantage of obviating the need to plough up so much good pasture land—productive land that can carry more sheep than cereal stubble.

There is enough evidence from other States and locally to indicate that in sowing successive wheat crops following say a five or six year term of ley, under precisely the same seasonal conditions the second crop can be expected to yield only slightly less than the first. There is the possibility, which is being investigated, that with a rotation of oats and wheat, insect and fungal troubles may be diminished and overall grain production increased.

Finally, there is a point regarding superphosphate usage. Enough information is available to indicate that where a farmer chooses to economise on superphosphate purchase, the older land and more particularly old clover land that has received an appreciable build-up of phosphate over the years, can go short without greatly affecting yields. It would seem that an application in the order of 56 lb. of super to the acre is sufficient to give optimum yields on such land.

Let me end on a warning note however. With new land it would, we are sure, be imprudent to attempt the same economy. Such lands have meagre reserves of phosphate and heavy dressings in the order of 150 lb. to the acre will generally pay dividends not only in immediate yields but in subsequent pasture establishment as well.

# "This farmer aims at non-stop driving..."

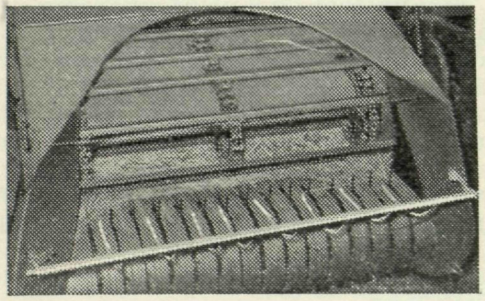
Back in the dry 1957-58 season, young Murray Bridge (South Australia) farmer, Mr. Murray Pope, had a lot of trouble when straw blew across the pick-up splines of his baler and fouled at one end of the auger.

He decided to do something about it—and at the same time design an alarm that would operate if either strand of binder twine broke.

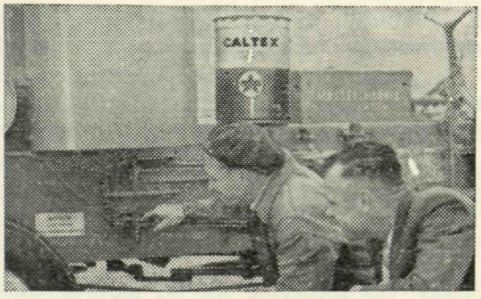
Just how successfully he accomplished what he set out to do is shown in these photos.

**Right:** Mr. Pope's balloon-tyred tractor (ordinary tyres bog too easily on Mr. Pope's farm) in action with "non-stop" baler. On tractor's left mudguard is a radio set and another innovation is the spotlight on the baler—just between the cans of Caltex oil

**Left:** The gadget that stops the straw blowing across the pick-up splines is shown here in white. The weight of the forks fitted (illustrated in white) is sufficient to ensure that the hay picked up will be fed evenly into the machine. The forks are welded on to a metal bar which is capable of turning like an axle, permitting the forks to rise and fall in direct relation to the quantity of hay being fed in.



**Right:** Mr. Pope and Caltex representative, Mr. R. D. (Roo) Allen, inspecting the twine-break alarm. Upper and lower twines are at continuous tension, keeping pivoting arms apart so that the electrical circuit is broken. If a twine breaks, an arm falls causing the horn to blow continuously. Power is from the tractor battery. The pivoting arms are, of course, earthed.

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