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Self help in soil conservation

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SELF HELP IN SOIL CONSERVATION

(CONTRIBUTED BY THE SOIL CONSERVATION SERVICE)

LAND is regarded by many people as the symbol of permanence—as a solid asset to pass on to succeeding generations. But farmers know, or should know, that soil is not static. They know that erosion by water and wind can cause good soils to become wastelands, and that wise land use can change initially poor soils into fertile expanses.

Progressive countries encourage soil conservation and provide technical advice and assistance to farmers with problems in soil conservation and soil erosion. But all problems cannot wait for on-the-spot inspections and advice by specialists. Farmers can, and should, do everything possible to help themselves. Not every farmer has the ability or initiative, or the plant and equipment to tackle all his soil conservation problems, but much can be done in many cases as the following examples will show.

SELF HELP ON AN AVON VALLEY FARM

Mr. R. J. Wallace came to Western Australia about four years ago from Temora, New South Wales. He purchased a 960-

acre property, the boundaries of which extend right to the Northam townsite. As he phrased it. "Its one of the few farms where the baker calls every day."

Like many Avon Valley properties it showed ample evidence of soil erosion after nearly a century of cereal and hay production and stock raising. Mr. Wallace recognised his problem and in July, 1953, attended a one-day Soil Conservation School for farmers, conducted by the Soil Conservation Service about 10 miles away in collaboration with the Irishtown Soil Conservation and Pasture Improvement Group.

At this school Mr. Wallace, with other farmers, learned more about the principles of soil conservation—the importance of improved pastures and crop management;

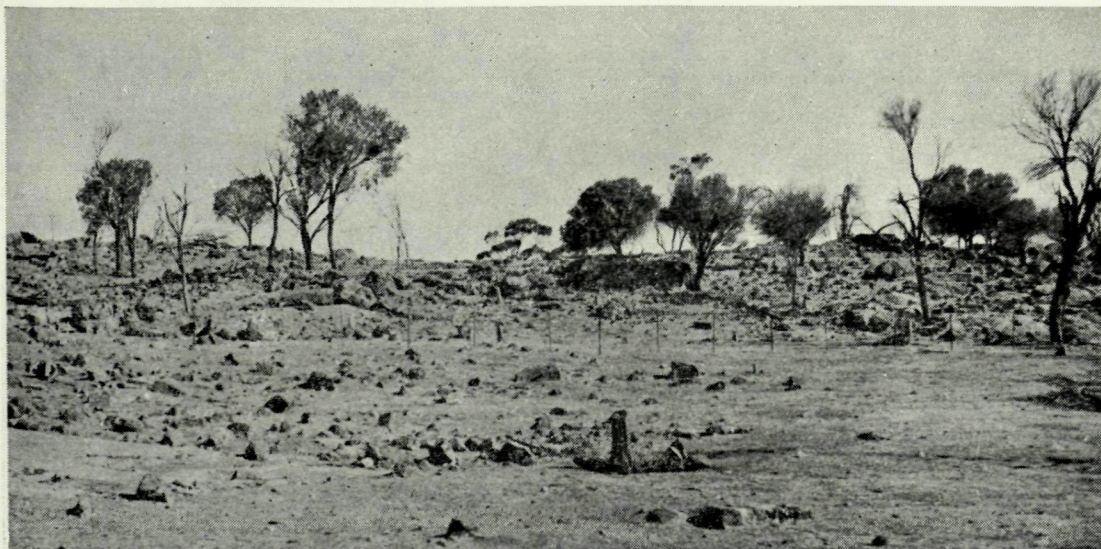


Fig. 1.—On Mr. R. J. Wallace's property at Northam, even these rocky ridges are carrying pasture. Superphosphate and pasture seeds are blown into the rough country by an air-blast topdresser

the soil erosion dangers of bare fallow; the value of contour banks and pasture furrows to help check down-hill flow of water. He saw examples of banks and bank construction with ploughs and small farm bulldozers. He learned how to lay out contour lines with a surveyor's level and with a simple and effective hose level devised by Soil Conservation officers.

Mr. Wallace requested a follow up visit to his farm by a Soil Conservation Adviser. When the visit was made several months later it was found that Mr. Wallace had already surveyed 300 acres for contour banks with his own hose level. His aim is to have as much rain as possible absorbed where it falls. "Rain is too scarce to waste," says Mr. Wallace, "and it does too much damage when it is allowed to run away."

The Wallace property is hilly with granite and other outcrops. Of its 960 acres only 630 acres are arable. Considerable gullying had occurred in the past and a very heavy rain in May, 1953, emphasised the need for prompt remedial measures.

The first visit of a Soil Conservation Adviser helped Mr. Wallace with suggestions for water disposal from contour bank system and with ideas for contour absorp-

tion banks and contour pasture furrows among the broken higher country. Contour banks have been built with a Fordson Major and a disc plough.

To improve stock-carrying capacity Mr. Wallace realised that pastures had to be improved on non-arable as well as arable land. Already his programme is paying dividends. Most of his arable land is carrying subterranean clover for a ley-farming programme and in addition, he has shown considerable ingenuity in adding to the sheep-carrying capacity of the non-arable areas.

To the power-lift scarifier with which he has equipped his tractor, he has added a grain and fertiliser box taken from a Sunderseeder. This is operated from a ground-wheel used also for depth adjustment.

The outfit is compact and highly manoeuvrable and with it he has sown oats, with superphosphate and subterranean clover over a large percentage of his broken country. Being attached directly to the tractor by the power-lift, the outfit can be raised and backed into awkward corners among rocks and trees to enable seed and super to reach every patch of cultivable ground. A small seed attachment facilitates the sowing of the

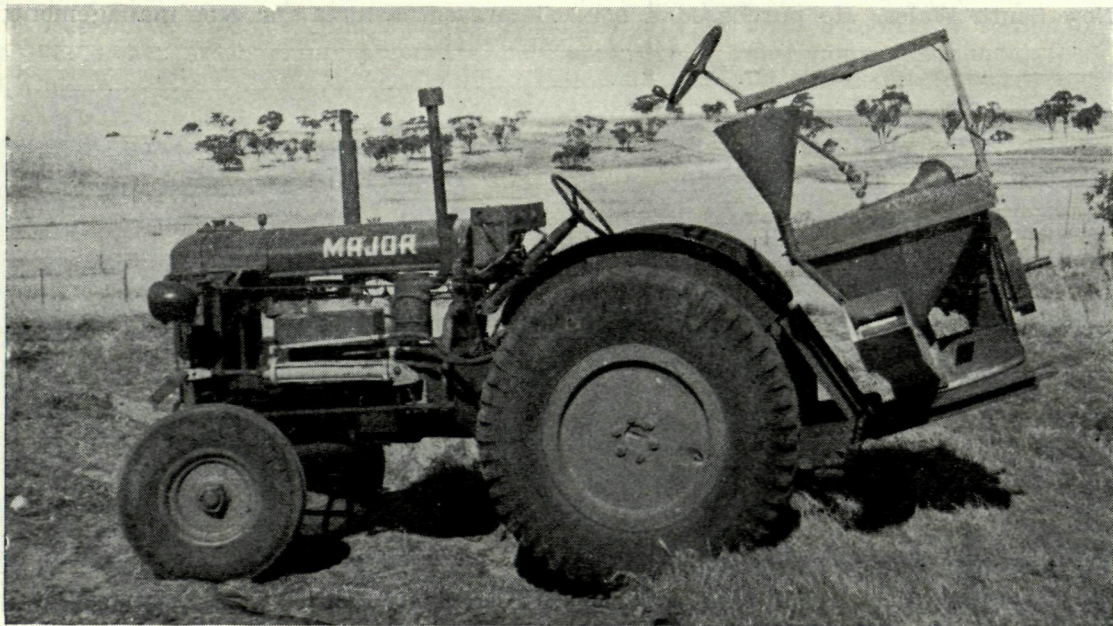


Fig. 2.—The air-blast topdresser mounted on the power lift system of the tractor



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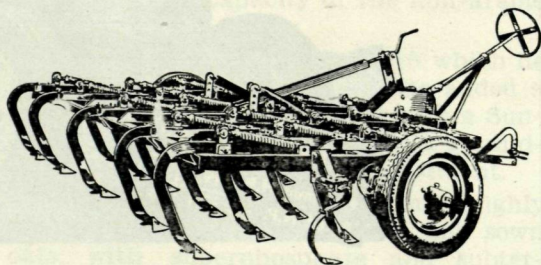


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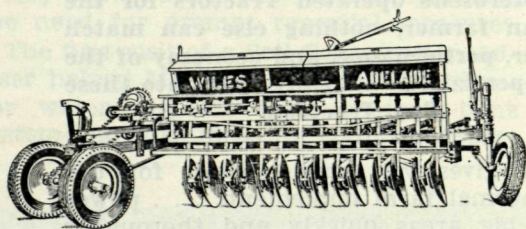
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clover seed, and as a result of this work, his sheep have excellent feed growing on ground which normally carried only a sparse growth of native grasses. Even in these broken areas Mr. Wallace has laid out contour guide lines.

Over much of his non-arable land, even this outfit could not operate successfully because of the stony nature of the ground. This rough country was not left unimproved however. Another attachment for his Fordson Major is an air-blast top dresser equipped with its own engine. Mounted on a platform on the three-point suspension power-lift, this "Aero" top-dresser will blow superphosphate and subterranean clover seed into country where no implements could operate.

By taking advantage of suitable winds, superphosphate and pasture seeds have been blown into hill-top areas strewn with rocky outcrops so that excellent grazing is available on every part of the property.

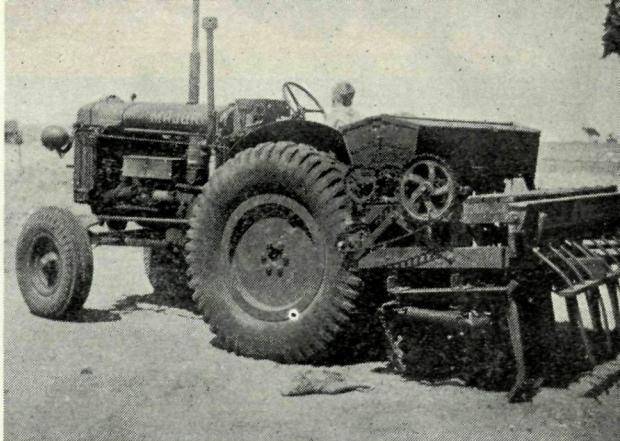


Fig. 3.—A tractor-mounted scarifier fitted with a seed and fertiliser box from a Sundercut is used to sow oats, sub-clover and superphosphate in small patches of soil between rocks and trees

AN OLD-ESTABLISHED PROPERTY

Not many miles away, at Irishtown, on the other side of Northam, W. H. Morgan & Sons have carried out extensive contour



Fig. 4.—Oats and clover sown in broken country on Mr. R. J. Wallace's property

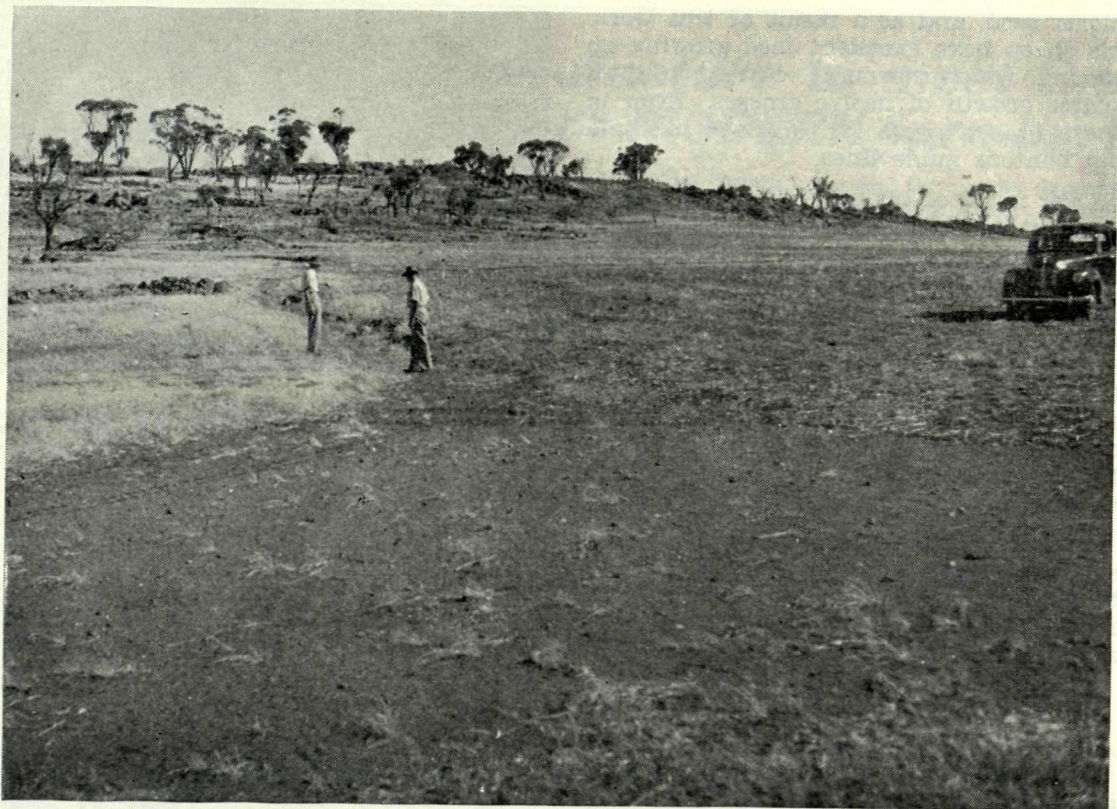


Fig. 5.—Heavy rains in May, 1953, caused gullying and this large "silt fan" on Mr. Wallace's property. Contour work has now greatly reduced the risk of similar damage.

farming on their two properties, "Bardeen" and "Minnathorpe." The Irishtown properties are farmed by three Morgan brothers, David, Max and Jim, and a fourth brother Alex is farming at York.

"Bardeen" was selected 115 years ago by the great-grandfather of the present owners. Near the big two-storey homestead is the grave of an ancestress, Mary Morgan, who was buried in 1852.

Water erosion has been a serious problem in the hilly Irishtown district, which is the scene of some of the earliest operations of the Soil Conservation Service in this State. David Morgan freely admits that contour farming has benefited their properties tremendously.

Most of their banks were set out with an A-Frame which they made from light pine timber and a spirit level. A Sundercut cultivating plough was used in the construction of the banks. On "Bardeen" with

a total area of 2,480 acres of which 1,952 acres are arable land, there are 866 acres now being contour farmed.

A further 340 acres are contour farmed on "Minnathorpe" which has an area of 1,195 acres with 1,100 acres of arable land.

The Morgans commenced applying soil conservation measures about eight years ago and on many parts of the properties the damage caused by serve gullying in past years has been convincingly "healed." Good growths of improved pasture and a policy of cultivating "on the contour" have done much to control the damaging runoff which resulted from heavy falls of rain on some steeply-sloping paddocks.

If these examples of self-help can be multiplied throughout the State's farming areas, a major advance in effective soil conservation will be the result. Further examples will be described in later issues of the Journal.