

lowed in extreme cases by a gradual breakdown in soil structure. Much of the inherent fertility of the medium to light cropping land in Canterbury was removed at a time when the growing of cereal crops was so profitable, and today the effects of this early exploitation are being widely felt. To bring depleted land back into production a programme of re-grassing is necessary, but the building up of fertility is very much slower than its removal.

In many cases where a farmer is finding difficulty in meeting his financial obligations similar overcropping occurs today. This may have been due at first to faulty management, but to secure ready cash a farmer is frequently forced into excessive cropping, which often leads not only to excessive cropping of individual paddocks but also to the removal of more and more pasture for cropping. The resultant loss of fertility causes lower yields, and more pasture is ploughed up for wheat, until the balance of pasture to cropping land is completely upset. This problem is undoubtedly one of farm management and the solution is twofold:—

- (a) By maintaining an orderly rotation, with systematic cropping and controlled grazing, higher individual yields and higher carrying capacity can be expected.
- (b) By keeping a correct balance between pasture and cropping land overcropping can be prevented.

The immediate returns may be slow, but over a period of years the farmer will find himself not only in a better financial position, but he will also have maintained his soil fertility at a higher level. In this way reduced cropping with higher individual yields will have taken the place of extensive low-yielding crops and depleted soil fertility.

In mapping out a plan of operations the farmer must take into account the maintenance and improvement of soil fertility. Repeated cropping of paddocks should give way to systematic cropping, allowing for the re-grassing of cropped paddocks every few years.

2. Pasture Maintenance and Soil Improvement

The importance of pasture land on a mixed cropping farm cannot be over-emphasised. It is a necessity in the

production of meat and wool, but it has also a far-reaching effect in building up soil fertility. The effect of clovers in providing nitrogen to the soil, together with the accumulation of stock excreta, assists in maintaining fertility, while the turf helps in building up tilth and providing nutrients to the soil. This, in conjunction with an adequate topdressing programme and controlled grazing to get the best out of pastures, will eventually improve the fertility of the soil. After one or two cereal and fodder crops have been removed from a paddock it is necessary to grass it down to renew the fertility which has been removed. As the pasture in time becomes "run out," a crop or two may be taken before sowing down into permanent pasture. In this way crops can be taken, yet fertility maintained.

The quality of pastures also bears a definite relation to soil fertility, because a high-producing pasture is capable of carrying greater stock numbers and fertility in the form of stock excreta is returned to the soil. Through its supply of nitrogen and humus a good pasture will build up soil fertility quite appreciably. For these reasons the wise farmer will include in his seed mixtures Government Certified ryegrass and clover. This has been the practice on a large proportion of the cropping farms of Canterbury, mainly because of the high price obtained for Government certified grasses and clover seeds. Under favourable conditions it pays the farmer to shut up one or two of these pastures for the purpose of seed production. Even the secondary effect which these high-producing pastures have in building up the general level

of soil fertility is a consideration. A practice frequently adopted by farmers on cropping land where conditions permit is to plough up pastures before they have completely "run out" and sow down with a grain crop. This "cashing-in" of fertility adds appreciably to the benefit of succeeding crops.

It can be seen that in planning ahead on the farm pasture maintenance and improvement are closely related to soil fertility, and crop rotations must be arranged to enable "run-out" pastures to be ploughed up in rotation and cropped paddocks to be sown down in pasture before soil fertility begins to show a decline. On a mixed cropping farm, where pastures last, say, from 4 to 5 years, it is necessary to sow down from 40 to 50 acres of new grass each year to maintain a yearly total of 200 acres of pasture.

3. Choice of Crops

The farmer has a fairly wide range in the choice of crops. The selection, however, is dependent to a large extent on soil type and climatic conditions. In most cases wheat is undoubtedly the main crop. It does not always pay a farmer to have "all his eggs in one basket," for not only does it entail a heavy pressure of work over a limited harvest period, but it does not allow for the spreading of any risk at harvest time. For this reason many farmers grow at least one or two other "cash crops" which may be classified as follows:—

1. Basic farm crops: Wheat, milling oats, field peas.

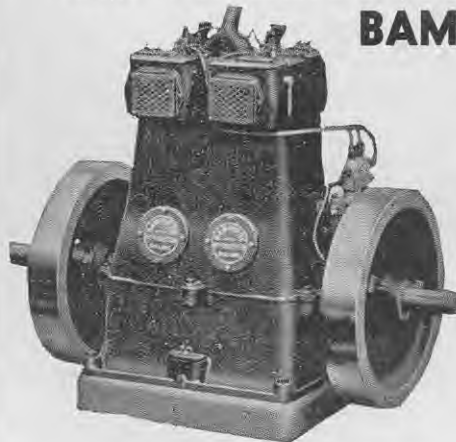
NOW AVAILABLE — Immediate Delivery

BAMFORD DIESEL ENGINES

In Sizes

3½, 12 & 16 H.P.

Available shortly—4½, 6 & 10 H.P.



TYPE DDI, 10 B.H.P., TWIN CYLINDER

Save money and install a 3½ H.P. Bamford in your Milking Shed this season.

Illustrations, specifications and details of outstanding constructional features forwarded on application.

Buy "BAMFORD" for efficiency.

Diesel power is the lowest cost power available.

A. M. BISLEY & CO. LTD.

Ward Street, Hamilton. P.O. Box 239. Distributors for New Zealand.

FARM LIGHTING BATTERIES

New plate groups to replace worn Delco and other make cells from 10/-. Guaranteed 2 years, supplied to fit any make glass or rubber jars. State make, number plates per cell, dimensions of jar.

Rokfire Electric Batteries Ltd.
Box 56, Patons.