

observational experiment which was carried out amply supports the contention that this unfavourable aspect of fruitgrowing may be overcome. The observation was made possible by the ready co-operation of Mr. W. J. McMiken, of Hamilton, who carried out the suggested treatment in his orchard, and later adopted the practice generally on apple-trees in his orchard.

The variety, Dunn's Favourite, was selected for the purposes of the observational test, because it is considered to be one of the varieties most prone to be thrown out of consistent cropping.

The particular trees were planted in 1914, and were well grown, being approximately 12 ft. to 14 ft. high and having a 14 ft. spread. The average number of leaders on a tree was in the vicinity of twenty-four. At the commencement of the observations the trees were heavily laden with short fruit-spurs, while practically no lateral growth was to be found. The trees had a rather exhausted and stagnant appearance.

Over the previous few years the crops were estimated by Mr. McMiken as being from 3 to 5 bushels in the "light" years and from 14 to 16 bushels in the "heavy" years.

Annual manuring had been carried out, the trees receiving approximately 3 lb. of superphosphate and 2 lb. of bonedust each. Green manuring with blue lupins had also been commenced in 1928.

The method of improvement was by (1) increased manuring, continued growing and ploughing under of green crops, and by (2) an improved system of pruning.

In the winter of 1930 a heavy reduction was made in the number of spurs carried by the trees, approximately 50 per cent. being cut away, and a commencement made in the reduction of the number of leaders by thinning out from three to four in each tree. The manuring was increased by 1 lb. of superphosphate per tree.

The following season was the "light" year, and a large amount of new lateral growth was produced. In the winter this new growth was left uncut, while a further inroad was made into the remaining old spurs, and approximately 20 per cent were removed. The leaders were reduced in most of the trees by a further two. The manuring was increased to 8 lb. per tree, comprising 6 lb. of superphosphate and 2 lb. of bonedust.

The second season was due in the cycle as a "heavy" year. With the heavy thinning of the fruit-spurs, followed by a heavy thinning of the fruit, the crop was reduced and approximately only 10 bushels per tree were carried. Extensive new lateral growth was made, while a heavy development of fruit-buds took place on the previous year's uncut laterals. At the winter pruning approximately 30 per cent. of the remaining old spurs were cut away, and all new growth, except where crowding, was left intact. The leaders were again slightly reduced in numbers.

In the summer of 1933 the trees now presented quite a different appearance, being liberally furnished with new lateral growth. The development of healthy buds had been extensive, and the promise was for a heavy crop in what would, in the old cycle, have been a "light" year. In the manurial programme an increase to 10 lb. per tree was made, which consisted of sulphate of ammonia $1\frac{1}{2}$ lb., superphosphate 6 lb., and bonedust $2\frac{1}{2}$ lb.