

sible for the effect in some instances. However it appears to be likely to be caused by any number of disturbances which would affect the smooth operation of the mowers.

As the mower units are drawn rapidly over the turf it is conceivable that any irregularity in the surface may cause the roller of the unit to snap up and then come down sharply, rebounding several times before regaining equilibrium. Such a condition has been recorded in tests by the Bureau of Public Roads when automobiles have gone over obstructions placed on a smooth highway. A line on a chart rating the vibrations caused in such highway tests takes the form of a series of waves of decreasing depth until they flatten out on the smooth road. Such an effect was naturally more pronounced with solid tires than with pneumatic tires, which are able to absorb much of the shock.

Rhythmic Motion Set Up

In the case of the mower unit the roller, like the solid tire, is unable to absorb the shock and a definite rhythmic up-and-down vibration may be set up. On the down stroke the bedknife is slapped down well into the turf and the knives cut close. On the upward swing the bedknife is lifted so the grass remains longer. The original impetus may come from a ridge where moles have been working or from some minor obstruction such as a small stick or a divot. It may even be provided by a piece of dense tufted turf. The first series of undulations are probably not very numerous, but with each mowing they are carried on further along the fairway and finally over the entire length of the fairway the mowers may continue this rhythmic vibration. When the ground is hard these vibrations affect only the turf plants. When, however, the ground is very wet, particularly in the case of clay soils, the blow delivered by the roller on the down stroke may be heavy enough to make a definite depression in the ground. With each subsequent mowing when the ground is wet, this depression may be increased in depth. Naturally the deeper the depression the heavier the blow delivered by the roller. Therefore once this corrugated condition develops in fairways it is likely to become increasingly pronounced unless immediate steps are taken to remedy it.

Corrugations appear likely to develop on fairways regardless of the type or

manufacture of mowers used. Units equipped with either the large or the small type of rollers have produced this condition. Corrugations have been observed on courses where the mowers are drawn with rubber-tired tractors and also on courses where metal wheels are used.

The best remedy for corrugations appears to be to cross-roll-and-mow the affected fairways. It appears to be necessary to cross-mow only occasionally to keep these irregularities in check after they have once been definitely overcome. Where it is inconvenient to mow across the fairway it is possible to check the damage by diagonal mowing occasionally. In the more advanced stages where the soil itself has been corrugated, cross-mowing may not be sufficient. In such cases rolling in early spring or at other seasons when the soil is soft appears to satisfactorily solve the problem, especially if it is combined with cross or diagonal mowing at frequent intervals during the season.

Since the problem of fairway corrugations is one of those problems where "an ounce of prevention is better than a pound of cure" it is well to be constantly on the lookout for its early stages. Whenever such a condition appears to be developing it is advisable to change the direction of the mowing at once. Perhaps two or three mowings in the opposite direction will be sufficient to prevent any objectionable corrugations. Where it appears to be developing only in a limited area it may possibly be corrected merely by change, for a time, in mowing speed.

Colorado Officials Contemplate Course for Greenkeepers

STATE of Colorado, division of agriculture, is considering the possibility of having a greenkeepers' short course for men in the Rocky Mountain region.

Wide variation in maintenance problems and distances short course students must travel from limits to the center of the Rocky Mountain area, are handicaps. However, outstanding achievements in this section's course maintenance and increasing importance of golf for resident and vacation recreation leads the state's agriculture authorities to believe the proposed short course would have enthusiastic reception and be of substantial value.