

tained in the surface soil would be buried and to a large extent lost to the grass. Such land would, of course, be benefited by applications of loam or compost; but this is usually too expensive a treatment for large areas. A cheaper method is to apply barnyard manure at the rate of from 20 to 30 tons per acre. By setting the disks in such cases at an angle the manure can be well incorporated into the soil.

#### BREAKING THE LAND

When the land is cleared of obstructions, whether it has been in cultivated crops, grain, pasture, or waste, it should be plowed and disked as soon as possible. Plowing should be as deep as practical, but not deep enough to bring up too much subsoil. Continuous cultivation for several weeks before planting greatly improves the physical condition of the soil, increases bacterial action and decomposition of organic material, conserves soil moisture, helps to eliminate weeds, and aids in the final leveling work. If there is sufficient time it will be well worth while to plant some green-manure crop to be turned under before planting. If there is no time for growing a green-



Digging a wide, open ditch with a wheel scraper on the side of a low fairway in Florida. The fill is being used to raise the fairway and to build the green and tee.

manure crop, and if manure is available, it is well to disk in a liberal top-dressing of manure (20 to 50 tons per acre) several weeks before seeding to allow time for decomposition and mixing with the soil.

#### GRADING

On land which has been cleared of timber there are bound to be holes of various sizes left where stumps have been removed. These should be filled, or otherwise they may be flooded and make further work difficult. These holes may often be used to advantage as places to bury stones.

On most courses the chief problems of grading will be around the greens, for it is there that the most extreme filling and excavating will be done. This part of the work usually raises the serious question as to where soil for the elevated portions can be obtained and where suitable topsoil may be secured. If there is likely to be any scarcity of topsoil, the best method is to stake out the full extent of all cuts and fills and then remove all topsoil from these areas. When the topsoil has been removed the cuts can be made for the traps, and