



How storm waters destroy in California. Newly eroded banks on the course of the Hillcrest C. C. of Los Angeles.

Some Details California Is Learning About Watering

By ARTHUR LANGTON

FIVE hundred thousand gallons a day for over 150 days without a break is but the usual figure for most southern California eighteen-hole golf courses in regard to irrigation output during the dry spell of the summer months in the necessary effort to keep the grass alive. It must be said, however, that this necessity has given no hint of its existence during the past few weeks in which an almost unprecedented period of "unusual weather" saw at least local showers falling almost every day. Nevertheless, this is the season when the wise greenkeeper is checking over his equipment and plans for the coming year in order to withstand the dry siege until about November. Any breakdown in the irrigation system will mean so much lost grass.

Had the economic depression stayed away from the Golden State, this year might have seen the installation of many more hoseless irrigation systems on the local golf courses. But unfortunately most clubs which do not already have them feel in no condition to withstand the consequent financial outlay. Regardless of the fact that the principle of the hoseless system has been accepted throughout the whole of this region as being the most efficient.

The statement of conditions made by one local greenkeeper will serve as a sample reason for the enthusiasm manifested in the Pacific southwest in regard to complete irrigation systems. With his hose system during the season of 1930 he found it necessary to employ three men for

twelve hours a day to put the hose and sprinklers on the fairways, move them periodically, and take them all off again ready for the day's play. His bill for irrigation amounted to about \$10,000 of which \$4,600 was for labor alone. He estimates that with the installation of a hoseless system one man working ten hours a day could cover the same amount of ground as the three men last year.

Need for Hand Watering.

But efficient as the hoseless water system undoubtedly is it must not be regarded as an absolute panacea for all irrigation ills; this out of justice to the manufacturers. There are certain conditions under which the hose and nozzle method must be used to obtain the best results. One of these situations is illustrated by the set of conditions which exist at the old San Gabriel Valley C. C. which is not at all exceptional. Constant wear has packed the soil tightly around some of the traps with the result that unless care is used in irrigating this section of ground, the water runs down off the fairways into the traps washing away their banks. The only way to obviate this difficulty is to either hand sprinkle the trap area or carefully place an ordinary sprinkler and allow it to run very slowly. Even with the latter alternative someone must exercise constant surveillance or dirt will be washed into the sand of the bunker.

A similar situation exists in regard to fairways built along the sides of steep hills. In order to keep the banks from drying out it is necessary that they receive large quantities of water, most of which will run down into hollows and collect in large pools. Incidentally, if a course is so poorly planned that a green is the focal point for run-off water, it is too bad for the green for it will become a breeding ground for crabgrass and a host of other pestilences. Unless these steep places can be watered a little very frequently they will either dry out or the low places will suffer from too much water. It is of course unfortunate that golf courses in California must have grass on banks at all, because the uniformity of turf texture has to suffer. Most local greenkeepers try to compromise by keeping their banks a little dry and their hollows as damp as is consistent with good golf.

Water Consumption Uniform.

It is surprising to note that despite wide variance in soil texture throughout south-

ern California the amount of water required by courses of approximately the same grassed area varies very little. In the courses near the mountains the soil is gravelly and rocky, consequently the ground absorbs water rapidly and allows for little or no run off. Constant watering is necessary. The moisture is carried beyond the reach of the roots because there is little to retain it. Down in the lowlands away from the mountains quantities of water are required for another reason. The soil in this latter district is extremely fine, sometimes it is adobe. Moisture penetrates very slowly and the grass roots are very shallow. The ground must be kept in an almost soggy condition to keep the roots supplied. If not, the hot summer sun beating down all day long without benefit of clouds bakes the soil into the consistency of concrete and withers the grass.

Charcoal Instead of Sand.

It can be seen readily that the greenkeeper on a course in California which has adobe soil is in for a merry time, not only from nature but also from the members. The latter do not like a soggy course but they insist that the greens be sufficiently soft to stop almost any ball that hits them, which two conditions are almost impossible to provide coincidentally. One local greenkeeper on such a course in the attempt to provide his players with perfection works large amounts of sand and charcoal into his topdressing material. This man, David T. Coull of the Potero C. C. of Los Angeles, says in this regard, "The fine sand which is ordinarily used for traps and tees is useless for this kind of topdressing because it packs and makes layers. The sand to use is that coarse material used by plasterers which has been properly washed beforehand to take out any traces of alkali. Coarse sand will work its way downwards cutting through the top inch or two of soil, thus making the greens more porous and consequently healthier. The sand and charcoal, by opening up the soil and allowing air to get at the roots may also be a means of lessening the danger of brown-patch. I do not guarantee this last statement, however."

Most of the local greenkeepers when beset with too-fine soil rely upon another method to remedy this condition. They inject lime, which seems to have the property of making small grains adhere to make larger ones.

One difficulty that confronts local golf courses in connection with drilling a well for irrigation purposes is that there is always some doubt as to what kind of water will be struck, and for this reason many clubs still buy their water from municipalities, fearing they know not what underground. That these fears are not without foundation is indicated by the experience of a number of courses which have drilled and found to their dismay that the resulting water supply was not conducive to the growth of grass. This may be understood when one realizes the volcanic condition of the state. In some parts of California sulphur water, iron water, and lithia water may be obtained within a mile of each other. Several deep wells on the coast produce nothing but salt water. At one club the water contains a minute portion of oil with the result that the soil is covered with a barely perceptible film which makes it extremely difficult for water to penetrate to the plant roots.

Time to Water Is Problem.

But whatever kind of water, sprinkling system, or soil is present on a southern California course the period during the year in which turf must be watered depends upon the grass itself. Bermuda grass needs only to be watered during six months of the year, from May until October; any other time would be a waste of effort. Bluegrass needs water for nearly ten months in the year, while bents need even more.

A schedule of irrigation for dry weather which approaches very close to a standard in this area is as follows: greens, every day; tees, twice a week; Bermuda fairways, once a week; bent fairways, at least four times a week; and other grass fairways, two or three times a week depending upon the heat.

Before closing, one word should be said in favor of the old time, hit-or-miss method of watering with a complicated hose system. It developed initiative and ability on the part of members of the night irrigation gangs to effect repairs under any and all conditions assisted only by a piece of wire.

ACCORDING to present plans the 1933 convention of the National Association of Greenkeepers will be held in Chicago and the 1934 convention in Toronto. The 1932 meeting is to be held in New York City.

P. G. A.-Jones Instruction Pictures Are Showing

ARRANGEMENTS made with Bob Jones now permit the showing of the P. G. A.-Jones slow motion pictures at the sectional meetings of the P. G. A. The pictures will be released, for pro instruction purposes generally, on May 15.

Vardon and Wethered pictures are being employed with great interest and success by pros in speeding instruction results and the Jones pictures have been in lively demand. General release of the Jones pictures has been delayed in order to avoid conflict with the pictures Jones is making for Warner Brothers for showing in theaters.

Presentation of these P. G. A.-Jones pictures at the sectional meetings which will open the season in the northern and central states is certain to draw a large attendance to these meetings and give the P. G. A. sectional bodies an opportunity to increase their membership among desirable professionals.

With the extensive publicity given to Jones' debut in the movies, the P. G. A. members are all set for a big profit in instruction sales by employment of the films, according to those who have given the pro instruction prospects close study.

Farber Heads New Greens Group of Carolinas

WILLIAM C. FARBER, Columbia, S. C., was elected president of the Carolina Greens association at its organization meeting held at the Charlotte (N. C.) C. C. The body was formed as the outcome of work instituted by Walter Cartier of the Charlotte Park and Recreation commission.

Other officers elected: Frank Maples, Pinehurst, First V. P.; R. V. Stout, Greensboro, Second V. P.; Walter Cartier, Charlotte, Sec.-Treas.; Ramsey Dulin, Corresponding Sec., Myers Park club, Charlotte.

Program of association work includes establishment of test plots at various courses in Carolinas and interchange of data on tests conducted uniformly at these places.

Donald Ross, O. J. Noer and E. S. Draper were featured speakers at the initial meeting.