the greatest extravagances that the business of golf has ever experienced, and possibly will retard much of the progress made in our investments in the past decade. Every building committee should consider these statements seriously before entering into any contract for emergency construction, and fully realize that it is better to do nothing at the present time than to do it badly or without the aid of an expert.

Those charged with the management and finances of the thousands of clubs in this country should realize the necessity of obtaining a workable unit with the minimum amount of upkeep and the maximum amount of efficiency, and entrusting these buildings with their courses and their purchasing power to a competent head with sufficient salary and interest in the club's business to make it worth while to save every dollar for the membership. An outstanding example of this modern method of running a club, is to be found at the Baltusrol club, Short Hills, New Jersey. There are many other examples of this method of handling the golf business today, combining the supervision of both the course and the clubhouse; and this type of control has proven conclusively to be the method which can put the club business on a paying basis.

Being modern in club design means: creating a building which is technically planned so that it may be operated in as efficient a manner as a first class hotel; employing materials which club practice has shown to be the most adaptable for this particular use and which will require the minimum upkeep. In addition to this, the character and size of the club rooms must be interchangeable and of the correct area to accommodate the various uses required by our modern living.

N. J. Fall Turf Meet Attended by 200

The fall meeting on the turf experimental plots in New Brunswick, New Jersey, held October 5, was attended by nearly 200 green-committee members, greenkeepers, commissioners and superintendents of public parks, representatives of airports, seed houses, and fertilizer and turf equipment concerns. Each of the several hundred plots was carefully labeled so that the visitors could draw their own conclusions as to the effect of the various treatments.

A discussion of the results obtained from

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these experiments was held on the plots during the course of the afternoon. Attention was called to the root development of various species of grass when cut at putting green and lawn lengths.

There was an excellent opportunity to observe that the system of fertilization on putting turf was effective in controlling the abundance of crab grass only as the desired turf grasses were made more vigorous. Wherever the treatment proved unfavorable for the growth of the bent grasses, crab grass was more abundant because of the greater opportunity for its establishment. On the other hand, broad leaf plantain seemed to be obviously injured by high soil acidity. On the acid plots, plantain was little in evidence, while those which were mildly acid or neutral in reaction, contained many more plants per square foot. Unfortunately, the degree of soil acidity which was sufficient to control broad leaf plantain, prevented the healthy growth of the turf grasses. Since the plantain was introduced in the turf largely through top soil containing the weed seed, it seems desirable to control the pest by preventing further introduction of seed, rather than by some system of fertilization.

Comparison of 10 kinds of grass for putting attracted much attention. Other experiments which were inspected during the course of the afternoon included the quality of turf on various types of soil imported from other parts of the state; the value of different types of organic matter additions for improving the physical condition of the soil; and mixtures of grasses for turf maintained at lawn and putting green length; fertilizers for fairways; the ability of various species of grasses to endure close mowing; and a comparison of soil mixtures in which the textures varied from sand to sandy loam, loam, and clay.
loam. The visitors also inspected the controlled experiments being conducted in the greenhouse on the effect of organic matter additions to the soil, and mulching with organic matter, on the water economy of turf plants. The belief was expressed that the type of information being obtained from these experiments would aid in deciding under what condition fairway watering becomes a necessity, and the principles which must be observed where watering systems are installed.

Tells of Root System

R. F. Arnott of the U. S. G. A., and the New Jersey Golf association, was in charge of the evening program. The first talk was by Dr. H. B. Sprague of the N. J. Agricultural Experiment station on the abundance of roots at different soil levels with various species of grass, and the relation of root growth to the amount of clippings removed. It was shown that cutting at ¼-in. largely restricted root development to the upper 4 or 5 inches of soil, whereas mowing at ⅜-in. permitted the root system to extend 2 or 3 ins. deeper. In all cases, however, very few roots penetrated farther than 9 ins. This was apparently due to the fact that this soil, which had been under cultivation for many years previously, had been plowed no deeper than 6 or 8 ins. The greatest root development occurred in the plowed zone to which lime and fertilizer had been applied at some time during the past.

Attention also was drawn to the influence of fertilizer treatment on the development of roots where the type of grass was the same throughout. It was shown that acid soils prevent the decay of dead roots. There is an apparent increase in weight of roots on such plots, but in this case root weight does not serve as a satisfactory index of root activity. The treatments producing the most vigorous turf were those in which the soil was mildly acid, and this was accompanied with a marked development of roots extending to approximately the ninth inch. From the data presented, it was obvious that it will no longer be satisfactory to consider only the upper 2 or 3 ins. in caring for putting green turf.

Prof. J. W. White of Pennsylvania State college discussed fundamentals underlying fertilizer practice. He called attention to the necessity for using lime in preventing the accumulation of excessive acidity, and likewise the need for phosphates and pot-
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ash on fairways. He recommended that nitrogen fertilization be restrained, particularly on putting greens, since heavy fertilization produces the type of turf which was likely to suffer from disease and mechanical injury. Prof. White also called attention to the need for further research on plant and soil problems.

Prof. H. B. Musser of Penn. State considered briefly the breeding work being conducted in an attempt to produce strains of turf grasses which are more resistant to disease and tolerant of soil conditions, than any strain now available.

John Anderson of Crestmont G. C. represented the National Greenkeepers' association, and conveyed a message from Colonel Morley.

Pittsburgh District Clubs Weather
Tough Year

HARD-HIT SPOTS GET BY O. K.

MOST seriously affected by business depression are the golf clubs in territories where there is one predominant industry. Pittsburgh, dependent mainly on steel, and Detroit, the automobile capital, are two of the hardest hit golf club areas in the country.

John Camozzi, veteran manager in the Pittsburgh district, tells a bluntly honest tale of how Pittsburgh district house business was hit, but stoutly maintains the situation had some benefits, and is showing marked improvement.

TO DETERMINE the trend of country club operation during the season recently closed and to forecast its future is a tremendous task, even though one is recording observations for only one district. While one is tempted to be entirely

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