

when the soil is warm and dry, punch holes about a foot apart into the larger nests with a cane or broomstick. They should penetrate until hard ground is felt. Into each of these pour one or two tablespoonfuls of carbon disulfide and fill the holes by pressing them with the foot. A wet canvas or blanket may be thrown over large mounds or several smaller mounds if they are close together. This gas penetrating through the underground galleries will reach the queen and all other inhabitants of the colony.

Calcium cyanide is useful in destroying ant colonies when used in the form of a dust. This material, when exposed to the moisture in the air, liberates hydrocyanic acid gas, one of the most deadly gases known. It should be purchased in dust form. Holes somewhat closer together than for carbon disulfide are drilled into the mounds and with the aid of a funnel pour in one teaspoonful of the dust. An effort should be made to get this dust into the bottom of the nests as the killing gas is lighter than air and will rise to the surface. As with carbon disulfide gas, the holes should be closed to retain the gas as long as possible. *In using either gas, do not spill or scatter the material on surrounding sod as it will kill the grass.*

Detroit Club Official Gives High, Low and Average at Five Clubs

DETROIT, one of the hardest-hit of all golf club sectors, is working its way out of the rough by learning the facts about costs.

Jack Bryant, secy. of the Detroit District Golf Assn., in 1932 compiled statistical information on operations of leading clubs in the district in one of the best, valuable jobs of this kind done during 1932. He had the usual trouble of lack of club response to contend with, despite the fact that the information he endeavored to get was something that every club could use. If there are any copies of this survey left you might be able to get one from Bryant's successor as secretary of the DDGA, E. L. Warner, 1680 First National Bank bldg., Detroit.

Wm. H. Ashton, Detroit, who is on the advisory committee of the USGA Green Section, is on the hunt for figures on course maintenance at metropolitan district clubs. He has sent out to a number of metropolitan district clubs the accom-

Composite of Labor Costs and Averages at Five 18-Hole Detroit Courses

	Men employed			Hours paid for—			Payroll—		
	High	Low	Av.	High	Low	Avge.	High	Low	Avge.
Jan.	2	0	¾	336	0	82	156.31	0	39.11
Feb.	3	0	¾	314	0	76	182.30	0	44.60
Mar.	3	0	1¾	721	76	345	309.52	0	128.15
Apr.	9	6	7½	1,994	910	1,282	586.08	338.10	522.06
May	13	9	10	2,261	1,460	1,937	1,069.96	603.72	838.06
June	10	9	9	2,622	1,817	2,242	1,274.51	366.80	833.47
July	10	8	9	2,387	1,725	2,040	1,145.78	635.42	899.23
Aug.	12	8	9¼	2,806	1,749	2,196	1,322.97	643.97	935.72
Sept.	9	7	8¾	1,848	1,192	1,643	1,009.11	576.00	744.95
Oct.	9	6	7	1,342	542	1,023	755.82	378.90	557.82
Nov.	8	2½	5	487	0	352	234.12	134.26	160.07
Dec.	1	0	¼	232	0	83	106.00	0	41.80
Year's average				15,158	11,678	13,347	8,031.24	4,162.40	5,827.52

Above figures represent labor items only, they do not include the greenkeeper, his salary, or cost of maintaining the lawns and gardens adjacent to clubhouse.

Four of these clubs watered their fairways, all five had Sunday work for mowing greens, etc.

Other Averages

	High	Low	Average
Maintenance—Entire cost for the year, including greenkeeper's salary, labor, payroll and other expenses except lawn and garden	13,589.03	9,810.92	12,066.00
Greenkeeper's salary	3,510.00	1,950.00	2,497.00
Gasoline and oil	510.27	315.26	423.66
Electricity (watering fairway)	1,429.69	726.94	1,031.15
Fairway fertilizer	500.00	200.00	291.74
Labor rate per hour	43½	38	39½

panying report of labor and some other maintenance costs at Birmingham, Grosse Ile, Essex, Orchard and Meadowbrook, and asked clubs receiving this information to exchange figures.

Although the usual criticism of inability to accurately and helpfully compare gross amount reports without considering variations in courses, the figures can be compared on a percentage basis so they will be of value to greenkeepers and chairmen.

Dickinson Gives Pros Greens Lectures, March 16 and 18

PROF. L. S. DICKINSON of the Massachusetts Agricultural college lectured on greenkeeping before audiences of pros, greenkeepers and club officials at Detroit, March 16, and Kansas City, March 18. The Dickinson lectures were details of the PGA educational program. At the Detroit meeting Albert R. Gates of the PGA also spoke, telling about selection of the Ryder cup team and expressing the opinion that with golf clubs getting back to golf the game could expect a good year ahead.

Dickinson's remarks at these meetings gave many of the pros who are responsible for course maintenance for the first time this year an excellent general survey of the job before them. He pointed out that golf's troubles now were not alone due to the general hard times but because the clubs had forgotten their foundation was supposed to be golf. Clubs that now are in difficulties almost invariably must attribute their misery to unduly high clubhouse fixed charges.

As workable averages, course maintenance costs are divided 75% for labor and 25% for materials, Dickinson said. Labor division figures were cited from the GOLF-DOM survey made under Dickinson's direction, as follows: tees, 8%; fairgreens, 12%; rough, 6%; traps, 2%; greens, 37%; construction, 11%; miscellaneous, 24%.

Some of the high spots of the Dickinson addresses:

"The greenkeeping policy should be to inform but not to dictate to committeemen.

"A good part of greenkeeping difficulty is due to working with a living organism.

"If you give grass half a chance or better it will put up a good fight for existence. Turf failures too often are due to acts of men. Nature is trying to help the plant. Reasonably healthy turf is remarkably resistant to trouble.

"Turf failures are due to cumulative errors, construction errors, immediate errors or pestilence. Of the cumulative errors the most frequent is that caused by compaction from poor topdressing.

"Don't use cumulative errors or construction errors as an alibi.

"It's hard to remove the cause of many turf failures because of the difficulty of diagnosing the source of failure. For that reason, too, correction can not be made at once, although immediate correction, of course, is what players always demand, not knowing the frequently complex nature of the problem.

"To eliminate construction errors check on your greens foundation, drainage and design.

"Main causes of immediate or cultural errors are: overwatering to hold the ball, overmowing of fairways, over-fertilization, poor technique, over-use of chemicals, failure to understand fertilizers."

Dickinson also gave his hearers some valuable, elemental information on grubs, fungous diseases and other turf pestilence. He advised them if they were having a lot of mysterious trouble with their greens to see if the source might not be in the topdressing.

The two educational sessions at which Dickinson appeared were successful beyond expectations. There were some misgivings that fellows who should have attended the many greenkeeping short courses during the winter would attend the Dickinson session and expect that Dick would give them deep secrets and some hypnotism that would make them master greenkeepers instantly. His talks tipped off the boys to basic thinking procedure as the foundation of successful greenkeeping rather than attempting to cram them with volumes of technical information.

Although the meetings were under PGA auspices, they were open to all interested in greenkeeping, so they not only benefited PGA members from an operating and educational point of view but gave the pro organization some great publicity for its efforts to contribute freely to the advance of golf.

West Newton, Mass.—New England Toro Co., 1121 Washington st., West Newton (Boston), has issued its 1933 catalog of course maintenance equipment and supplies, copy of which will be sent free. The book is one of the most complete course maintenance purchasing guides and shows some marked reductions in prices