

have sufficient school and practical experience and maturity, so as not to reduce the standards of the work. These applicants are examined individually by a faculty committee.

Those who are interested in such work should write to the secretary of the College of Agriculture, Ithaca, New York, stating what school work and what practical experience they have had, and should apply for an announcement of courses. In that pamphlet will be found a statement of requirements for admission and descriptions of courses followed. Students may be admitted in September or in February.

This Is Not a Joke

Muck sold commercially as "Humus" is probably profitable to use in compost heaps for golf courses if it does not cost laid down more than one-third the cost of manure. At one-half the cost of manure its use is of extremely doubtful economy.

Golf Courses and Their Increase in the United States

LEONARD MACOMBER, *Chicago District Golf Association*

The 1922 *Directory of Golf Courses* shows a total of about 1,834 golf courses in the United States. In addition to this, it is doubtful if there are more than 250 nine-hole courses at summer-resorts and winter hotels. The approximate number of eighteen-hole courses is 690 and the approximate number of nine-hole courses is 1,140. In other words, 37.7 per cent of the total number of courses represents eighteen-hole courses.

The figures are as follows, arranged according to states. The number of towns with a population of over 3,000 in each state is also shown:

State	Number of towns over 3,000 population	Number of golf courses
Pennsylvania	275	112
New York	154	214
Illinois	151	130
Massachusetts	147	108
Ohio	141	86
New Jersey	105	73
Texas	105	43
California	95	85
Michigan	86	72
Indiana	84	54
Wisconsin	71	39
Iowa	66	48
Missouri	57	46
Kansas	54	53
Minnesota	51	40
Oklahoma	51	20
Virginia	50	21
Georgia	48	32
North Carolina	43	20
Connecticut	42	47
Kentucky	42	25
Tennessee	35	24
Louisiana	33	12

Arkansas	32	10
Alabama	32	15
West Virginia	31	12
Washington	30	20
Florida	28	68
South Carolina	27	14
Rhode Island	26	14
Mississippi	26	17
Nebraska	23	47
Maine	22	30
Colorado	22	17
New Hampshire	20	38
Oregon	20	14
Idaho	17	4
Montana	15	8
Arizona	15	11
Maryland	15	17
Utah	14	4
Vermont	13	20
South Dakota	12	18
North Dakota	11	11
New Mexico	11	11
Wyoming	7	2
Nevada	3	1
Delaware	3	4
District of Columbia.....	1	3
Totals.....	2,462	1,834

From the above one will note that there are about 628 more towns and cities of over 3,000 population in the country than there are golf courses.

It is interesting to compare the number of golf courses in Great Britain with the number found in this country. The figures are as follows: England, 748; Wales, 44; Ireland, 93; Scotland, 368; total, 1,253.

Great Britain has about the same area as the New England states, New York, and New Jersey put together, namely, 120,000 square miles. The populations are 42,800,000 and 21,000,000, respectively, or about two to one.

Great Britain has 1,253 clubs, as against 544 for New England, New York, and New Jersey, which is more than two to one as to area, but about equal in ratio to population.

It may be well to cite figures whereby one can see the opportunity for developing the game in this country, by building, let us say, from one to fifteen golf courses in every town and city in proportion to the population, as follows:

CLUB COURSES			
<i>Cities between population of</i>	<i>Number of cities</i>	<i>Number of club courses to each city</i>	<i>Total number of club courses</i>
3,000- 15,000	1,970	1	1,970
15,000- 30,000	342	2	684
30,000- 100,000	83	3	249
100,000- 200,000	35	4	140
200,000- 300,000	12	5	60
300,000- 500,000	8	6	48
500,000-1,000,000	9	8	72
1,000,000-3,000,000	2	10	20
Over 3,000,000	1	15	15
Total.....	2,462		3,258

PUBLIC COURSES

<i>Cities between population of</i>	<i>Number of cities</i>	<i>Number of public courses to each city</i>	<i>Total number of public courses</i>
15,000- 30,000	342	1	342
30,000- 100,000	83	2	166
100,000- 200,000	35	3	105
200,000- 300,000	12	4	48
300,000- 500,000	8	5	40
500,000-1,000,000	9	6	54
1,000,000-3,000,000	2	8	16
Over 3,000,000	1	10	10
Total.....	492		781
Total number club courses.....			3,258
Total number public courses.....			781
Possible number club and public courses.....			4,039

Of course, it is taken into consideration that the majority of golf courses around our large cities are located in suburban towns of more than 3,000 population; these, however, have not here been counted twice. On the other hand, it must be remembered that there are quite a few golf courses in towns with less than 3,000 population, representing summer and winter resorts and small towns adjacent to larger cities. This is quite noticeable in the resort states, for example, Florida, Maine, New Hampshire, Vermont, Massachusetts, California, and so on.

It would seem that there is certainly room for an increased number of golf courses in this country in the next five or ten years, because, as shown above, there are probably 2,000 courses altogether at the present time, and apparently there should be a demand for about 4,000 courses if constructed economically and maintained on a reasonable basis.

The development in the western and southern states has been more rapid in the past ten years than in the eastern states. For instance, there are about nine times the number of courses now in Kansas than ten years ago; Mississippi is next, with six times the number; then Nebraska, Minnesota, Montana, and North Dakota, with four times the number. There has also been a larger increase in the number of courses in Florida, Texas, California, Georgia, Kentucky, Washington, South Carolina, Louisiana, Arizona, and Oregon, and the number has doubled in Michigan, Ohio, Illinois, Indiana, Iowa and Tennessee. The greatest opportunity for development, however, is for public courses, as at the present time there are only about a hundred in the country.

Golf no doubt will some day become the national sport of the country. The game has not as yet been played here for fifty years, while in Great Britain the first club was established in 1608, on the common at Black Heath, in London. This old seven-hole course was still in use a few years ago, and was played three times around. Perhaps, when the first golf course was established, in 1735, in Scotland near Edinburgh, and afterwards, in 1754, when the Royal and Ancient Golf Club established its course at Saint Andrews, it was decided to have an even number of golf holes for Scotch foursome play; so "eighteen" was the number chosen, making an uneven number "out" and "in"; and this was the same as playing six holes of the Black Heath course three times around.

Estimated Value of Golf Course Property in the United States

18-hole courses. 80,000 acres, at \$1,500 per acre.....	\$120,000,000
9-hole courses. 50,000 acres, at \$500 per acre.....	25,000,000
Total.....	\$145,000,000
<i>Annual Maintenance Expenditures</i>	
18-hole courses. 690, at \$10,000 each.....	\$6,900,000
9-hole courses. 1,140, at \$3,500 each.....	3,990,000
Probable additional courses. 250, at \$2,800 each.....	700,000
Total.....	\$11,590,000

Experiences With Untested Seed

MAYNARD M. METCALF, *The Orchard Laboratory, Oberlin, Ohio.*

In the original seeding of a couple of fairways on one northern Michigan course a recommended seed mixture was used, but without testing the character of the seed. It proved to have contained a good deal of sheep's fescue and gave a wretched cuppy turf on these fairways. Four years ago several hundred pounds of what was claimed to be Chewings fescue seed was purchased from a reliable dealer recommended by one of the ablest agronomists in the government service and was used in heavily top-seeding the fairway turf short of the greens. It was well on in the fall before the decision to use the seed was made, and, to save time, a sample was not sent to Washington to be examined before purchasing and using. When the grass appeared no Chewings fescue was found, but there was a heavy catch of sheep's fescue.

For two years the course was played with its wretched cuppy turf on the most important portions of the fairways, just short of the greens, with serious effects upon the dispositions of the players. Last year \$1,200 was spent for labor in taking away every root of sheep's fescue from the whole course (9 holes), fairways, rough, and all, and reseeding with good tested seed. The two mistakes in using untested seed thus cost the club \$1,200 in labor, about \$200 for seed, and a great deal of irritation—the whole thing a needless waste, for the Department of Agriculture at Washington will examine seed samples free of cost and tell if they are as represented and are free from weed seeds, and one can readily himself test their viability. All that is necessary is to be forehanded in making plans so as to allow time for the testing before purchasing the seed.

Inquiry of greenkeepers on two of the best eastern Massachusetts courses develops the fact that sheep's fescue observed on their fairways came in seed purchased as red fescue; so the contamination of fescue seed of desirable varieties by sheep's fescue seems not to be exceptional.

Fall burning of the rough.—It is good general practice to mow the rough, all weeds, etc., and burn this material every fall. It may save much injury from insects the next year.