drive of 205 yards and an average fairway wood shot of 175 yards.

By Langford's progressive fractional par system, a man's par 3 hole is any hole of 240 yards or less and a hole of 300 yards or longer is definitely in the par 4 class; the midway point, 270 yards, would be par 3.5. Langford has gone into mathematics to set the par 4.5 distance at 493 yards. He maintains that fractional par will provide a close measure of stroke probability, from which accurate inter-club handicaps can be derived.

Langford differentiates sharply between par and difficulty. Par, he says, is the probable average score of perfect expert play, and is based on length only. The difficulty in rating a hole is the uncertainty of making any given score on a hole. It depends on many factors, among which are length, surface warp, hazard placement and course condition, and can only be discovered by an analysis of competitive scores.

He has worked out a simple method of analyzing scores by which holes on any course may be rated and handicap strokes allotted in the fairest possible manner.

Langford began his research into par rating in 1924 in an effort to compute how wide a green should be for the approach shot required and his work toward a mathematical checkup of the artistic phase of golf architecture led him into the fractional par field. Checking over the scores of numerous National Open championships and National Amateur qualifying rounds, as well as data on club tournaments, developed the fractional par system.

System Checks with
Tourney Averages

Langford's application of his fractional par computation to Oakland Hills, scene of the 1937 National Open, revealed that course as an eminently sound one. Scorecard par is 72. the average score of the first 25 and ties in the National Open was 72.80 and the Langford fractional par is 72.89. The hole on which the lowest percentages of pars was scored was the 491-yard eighth which used to be a par 4 hole but which was lengthened to give the bunkers significance for the second shots. There were 54 scorecard par 5s on the hole, 41 birdies, 4 eagles, 6 sixes and a 7 on the hole. By the Langford fractional par method the hole would be par 4.49. The Oakland Hills hole that was most frequently made in par was the 416-yard seventh, on which there were 86

pars out of 108 rounds played by the leaders. The average score was 3.89. Fractional par on this hole would be 4.15. This difference of .26 stroke under par is the widest gap between fractional par and the leaders' average score in the Oakland Hills case.

Langford does not advocate half strokes for putts. He presents the fractional par idea entirely as a sound mathematical basis for comparative difficulty ratings, not only between various holes on the same course, but between different courses.

However, he has worked out from data on games of expert and average players, and on a mathematical basis, a fractional par putting table that gives a reasonably good foundation on which to appraise putting performances. Obviously the expert who is content with the traditional 2-putts-per-green idea in par is not going to finish very high in competition. Accuracy of approaching, of course, has much to do with the putt total, and on that account Langford says that the fractional par determination of the full distance between tee and hole offsets the error of the antiquated two-putt factor in determining par.

Portland Dads Backing School Instruction Proposal

DADS' clubs of Portland, Ore., high schools are active in a move to put golf instruction into the local schools. The enterprise is receiving encouragement and support from Portland high school officials, sports editors and pros.

L. L. Rau of the US Rubber Co., and president of the Franklin High School Dads' club, is prime mover of the plan and hopes to see the Portland plan followed by Dads' clubs throughout the country. George Bertz, sports editor of the Portland "Journal," has been giving the Dads' club golf instruction plan a strong boost and forecasts that one-fifth, at least, of Portland's 22,000 high school students will enroll in golf classes if the golf teaching plan is favored with strong cooperation by local pros.

IN 1618 King James VI granted James Melville a monopoly on the golf ball trade, on grounds that "no small quantitie of gold and silver is transported yierlie out of his Hienis' kingdom of Scotland for bying of golf ballis."