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displays of pro shops . . . Bert says so many shops have been rearranged cleverly that they look like new shops . . . Among new pro locations he notes are Joe Creavy to Colonie CC, Albany; James Murray at Amsterdam muny; Bob Tuthill at Totem Lodge CC, Averill Park, N. Y.; J. M. Hawk at Bath CC; Frank McMullen at Normanside CC, Delmar, N. Y.; Joe Uvanni at Beaver Brook GC, Rome, N. Y.; Mike Parco at Springville CC; Jack Ford at Green Mansions GC, Warrensburg; and Steve Piech operating Air Park GC, Hamburg.

Miller's 1955 Open, won by Cary Middle-coff, is part of the "Sports Highlights of 1955" movie you can borrow from the Film Section, Sports Promotion Dept., Miller Brewing Co., Milwaukee 1, Wis. . It's a fine film for showing at club affairs and has skiing, baseball, football and auto racing, along with golf, in the picture.

Golf Course Supts. Assn. of America has agreed to share proceeds of souvenir program of national conventions with local associations that are hosts to the affairs . . . Sid Cooper and his wife, parents of Harry Cooper, are hale and hearty in retirement at Phoenix

(Continued on page 66)



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GOLFDOM

JULY • 1956

MINNESOTA PGA Teaches the Teachers

By HERB GRAFFIS

THE way in which the Minnesota PGA goes at its work of bettering the results of golf instruction gives pros everywhere a successful policy and procedure to study.

Delegates to the 1955 national PGA meeting were impressed by some exhibits of Minnesota golf instruction methods, particularly by the golf exercises devised by Les Bolstad for members of the University of Minnesota golf team which he coaches. However to get a real inside on the methods which have made Minnesota's representative professionals instructors of an exceptionally high average of effectiveness one must attend the instruction session at the association's spring meeting. Not all of the Minnesota PGA members are there, unfortunately. It's the tough luck of the absent ones and their club members because this session coordinates in a most useful manner practical, specialized experience of successful professionals and the most advanced methods of physical education and manual skills instruction as presented by members of the University of Minnesota faculty.

Pros' Scientific Attitude

There are two features that stand out in the Minnesota PGA instruction sessions: First is the attitude of scientific investigation; the other point is the method of organizing and conducting the class in which the teachers compare methods, ideas and results.

Nobody appears to be reluctant to come forth with a question or to tell how a somewhat different teaching procedure was successfully applied.

It has seemed to this writer that the veterans Willie Kidd and Jock Hendry have had a great deal to do in encouraging a spirit of eagerness to look for something progressive in golf instruction. Jock and Willie have been first class golf instructors for many years and when they show genuinely keen interest in what earnest younger pros tell about their own methods, successes and failures, the younger fellows feel that they are with noted authorities who are working with and for them.

Bolstad Organizes Study

Les Bolstad, a profound golf scholar as a promising amateur, then as a tournament and teaching pro, and now teaching golf to the University of Minnesota's pupils and faculty, is credited by his Minnesota PGA colleagues as making the Minnesota spring teaching session the most valuable class for teaching teachers in all of pro golf.

Bolstad conducts the session by presenting instruction problems that arise during almost every professional's work on the lesson tee. Pros who have been especially successful in solving particular problems begin the discussions with their suggestions. Then other professionals are asked to comment from their own experience.

The hours pass with this well-organized cooperative research effort and at the close of the session each pro not only has acquired new and sound ideas but an added respect for the brains and helpfulness of his colleagues.

Watch Your Words

Among helpful points that the Minnesota pros consider at their sessions are those of the expressions that are most vivid to the pupil. The professionals recognize that a phrase may have different meanings to different pupils, hence an important part of the teaching job is to speak in words that make a clear, understandable picture to the pupil being taught. For instance, one professional said he found himself saying "hand action" when he actually meant hand and arm action, and was puzzled by the pupil's inability to get the idea.

Pictures Help in Teaching

Comparisons of experiences with pictures as instruction aids also contribute to the value of the Minnesota PGA instruction sessions, Care in camera placement in taking instruction movies is one point the Minnesota pros stress. They have made arrangements with a photographer who goes around to their clubs and makes flip-books of movies of their members.

One pro uses a Polaroid camera for getting instruction pictures printed in about a minute. He told of taking a pupil's picture at contact and discovering that the elbows were spread when the ball was being hit. This gave quick help in discovering and correcting the fault.

The Bolstad outline for the 1956 session presents elements of the instruction program of the Minnesota pros.

Minnesota Pros' Outline

I. The only short cut in learning the golf swing is to present the swing as a whole pattern of movement, fill in the parts, then go back to the whole again. Whole-part-whole.

a. Golf pros are prone to think of detail not wholeness.

II. Create a favorable climate for learning.

> a. Attitude of friendly cooperation, interest in the person, general air of relaxation.

> b. Present only a reasonable goal which pupil can accomplish.

1. Most all pros are perfectionists and set too high a goal.

2. Set too high a standard and there is apt to be a let-down and feeling of failure.

c. Be sure to point out that learning takes time, that only practice can erase the initial awkwardness, that there are apt to be sharp ups and downs in performance.

d. One of the greatest enjoyments in golf is to improve.

e. Praise as a factor in motivation. The difficulties of the game itself will knock the pupil down enough.

III. Recommended ways to start a be-

ginner can vary. Figure out the easier skill. a. Full swing with shorter-handled club stressing outline, movement, posture, and body movement.

> b. Short swing stressing hand and arm movement and producing immediate results of square contact with ball.

c. Intermingle the two.

d. Putting.

e. One handed swing with right hand.

IV. Just talking won't do the job. You have to demonstrate. Don't neglect the demonstration. Get right in and maneuver the pupil. Figure out ways to maneuver a golfer thru swing.

V. Develop set lectures for such things as putting, approaching, sand shots, description of full swing. Present a plan instead of just making corrections.

VI. Have your pupil make notes on points brought out in lesson.

a. Rate of forgetting is high especially in first 24 hours.

b. The effect of a lesson may be multiplied many times over if the golfer keeps notes.

VII. Encourage pupil to follow daily habit drills.

a. You can't have pupil think of everything, much has to be reduced to habit.

VIII. Habit breaking is often the crux of the problem.

a. Before you can learn a new habit

you have to break the old one.

b. Three steps recommended:

1. Purposely practice the wrong.

2. Simulate the right move.

3. Overlearn.

IX. If something works, have learner repeat the plan over and over with the idea of firmly implanting the feel and the habit.

a. This would be no time to introduce a new idea.

X. If something doesn't work, drop it.

XI. Size up the individual for strength, coordination, length of fingers, arm length, age, personality.

> a. Be sure to determine which is (Continued on page 69)

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How Much and What Is Cut From a Bermuda Green

By O. J. NOER AND J. E. HAMNER

VIELD DATA and the chemical composition of clippings obtained from a Washington bent grass green at Brynwood CC, Milwaukee have been reported. Lester Verhaalen collected and weighed the clippings each time the green was mowed. A 5-lb. green weight sample was taken each week for dry weight determination and for chemical analysis in the laboratory of the Milwaukee Sewerage Commission. The samples were combined into composites, each representing a four-week period. The season's production of dry clippings was about 100 lbs. (96.7 lbs. actual) per 1000 sq. ft. of area. The plant food content was 4.83 per cent nitrogen, 1.80 per cent phosphoric acid, and 3.24 per cent potash.

Similar data had been reported by the Green Section of the USGA for bent grass. Their results were in substantial agreement with those obtained in Milwaukee.

There was no record of similar data for Bermuda grass greens. Information of this kind is valuable and can be most helpful in devising a sound fertilizer program. We decided to make a test.

The 14th green at the Memphis CC was selected as being most convenient. A data sheet upon which green weights could be recorded was prepared for posting alongside an accurate scale. The sheet had a 31line column for each month so the weights could be entered on the line corresponding to the date of mowing. The date on which samples were collected was recorded on an adjoining column.

An outline of the green was made on cross section paper. Each major horizontal and vertical line represented 10 ft. The engineering staff of the Milwaukee Sewerage Commission used this diagram to make an exact computation of the area in the green, which was 4,340.3 sq. ft.

Separation of the foreign matter from each composite sample of air-dry clippings, dry weight determinations and the chemical analyses were made in the laboratory of the Sewerage Commission.

Fertilization affects the chemical composition of grass. The major effect is upon nitrogen. The amounts of phosphoric acid and potash do not fluctuate appreciably percentagewise, based on fertilizer applications.

Fertilization Spring and Summer

Fertilization of the 14th green during the spring and summer was as follows indicated rates represent pounds per thousand square feet:

1. March 3, 1955... 16 lbs. Milarsenite on the one-half of the green not overseeded with rye grass to control poa annua. The Milarsenite contained 3 per cent sodium arsenite and 97 per cent Milorganite.

2. March 10, 1955 . . . 40 lbs. Milorganite on the part of green overseeded with rye grass.

3. April 15, $1955 \dots 3\frac{1}{2}$ lbs. ammonium nitrate — on part of green not overseeded with rye grass to clean up poa annua.

4. May 10, 1955 . . . 60 lbs. Milorganite – entire green fertilized.

5. June 6, 1955 . . . 40 lbs. Milorganite – entire green fertilized.

6. July 1, 1955 . . . 40 lbs. Milorganite – entire green fertilized.

7. August . . . 30 lbs. Milorganite – entire green fertilized.

8. The green was topdressed three times during the season using $1\frac{1}{2}$ cu. yds. of topdressing material each time. The topdressing was treated with granular cyanamid at the rate of 15 lbs. per cu. yd.

Phosphate-Potash Before Seeding

Practice at Memphis CC is to use phosphate and potash in the fall before seeding to rye grass. All nitrogen applications stop about a month prior to seeding. The phosphate-potash mixture is applied a week or ten days before seeding. The rate for 20 per cent grade superphosphate has been 20 lbs. and for 60 per cent grade muriate of potash 10 lbs. per 1000 sq. ft.

Three weeks after germination of rye grass the first application of nitrogen is

Noer is widely known agronomist of the Milwaukee Sewerage Commission; Hamner is supt. of the Memphis (Tenn.) Country Club.



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