the year. This should be made according to the need. Where putting green turf has a tendency to become infested with poa annua, it is suggested that nitrogen fertilization be delayed until the bent has started to grow well. Early treatment of poa annua turf with nitrogen may stimulate the poa at the expense of the bent. From a pound to a pound and a half of nitrogen per month for each 1000 sq. ft. of putting turf is estimated to be the requirements for satisfactory putting green turf. Tf soils are heavy and there is a tendency to scald in mid-summer, fertilizer treatments should be omitted or cut in half for the summer months.

3. Weeding. The best control of weeds in putting green turf is a good solid stand of grass. Clover, poa annua, chickweed and other weeds are an indication of weak turf. The cause should be found and remedied. Weed control chemicals are not recommended on putting green turf.

4. Topdressing. Topdressing is required to maintain a smooth, true putting surface. Since this is one of the most expensive operations on the golf course, its justification should be carefully considered. Some putting greens have been maintained for as long as 12 years without any topdressing. The best mixture that can be recommended, according to the authorities, is one that contains equal parts by volume of good clay loam soil, coarse concrete sand, and peat. Manure or raw sewage sludge do not take the place of peat as the source of organic matter. If desired, well rotted manure, five or six years old and thoroughly composted may be substituted for half the quantity of the peat. Topdressing should never be applied on heavily matted turf. The excess grass should be raked out thoroughly so that contact is established between the topdressing and the soil. The best time to accomplish this is in the cooler seasons, spring and fall, when the grass is growing vigorously and will recover from the shock.

5. Mowing. Mowing at a height of 3/16 inch should be the rule unless members object to the greens being too fast, then the height of cut may be raised to  $\frac{1}{14}$  inch. It is considered best to maintain the same height of cut throughout the season. If the grass needs an occasional rest it may be best to skip mowing now and then to give it a little more growth. The best greens are mowed daily.

6. Insect Control. Web worms become a serious pest in some seasons. Reduce the damage from this pest as well as to control earth worms, cut worms, grubs and to some extent chickweed and poa annua, by using arsenate of lead. Apply as a spray at the rate of 1 to 2 pounds in 10 to 20 gal. of water per 100 sq. ft. Apply when fair weather is predicted. Treat ants with any method of control before the warm weather of summer arrives. Stomach poisons should be applied at intervals of approximately two weeks in order to kill the entire colony. Sabadilla dust, 10% strength, may be applied in order to kill at the rate of 100 pounds to the acre, or 21/2 pounds to 1000 sq. ft. for immediate control of leaf hopper, chinch bug, and many other chewing and sucking insects. The use of 10% dust or 50% wettable powder of DDT or Chlordane as a spray should be considered for the control of chinch bugs, sod web worms, cut worm and similar insects. The suggested rate of application is 10 pounds of actual DDT or Chlordane to the acre of 1/4 pounds to 1000 sq. ft.

7. Watering. Water greens lightly in the morning during the brownpatch season. Morning watering reduces diseases, especially brownpatch. After spiking they should be heavily watered. Early morning watering takes the place of poling for the removal of dew. This job requires the best man on your force. That's how important it is.

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## PACIFIC COAST MIDSUMMER TURF MEETINGS



Group shown at left met at San Diego CC (Calif.) in June. Marvin Ferguson, USGA Green Section, and O. J. Noer addressed the group in the afternoon discussion meeting. Outcome of the meeting was decision to organize a local association devoted to development of better turf. At the right is shown a group in attendance at the Washington State Turf Conference, Pullman, Wash.