

where the females deposit their eggs. The eggs hatch in 2 or 3 weeks and the young grubs begin at once to feed upon the roots of grasses and other plants. In the fall the grubs, which are then about $\frac{1}{2}$ inch long, migrate to lower soil levels, usually below the frost line. The warmth of spring brings the grubs to the surface again and feeding on the grass roots is resumed.

Now with their increased size and proportionately increased appetites and a full growing season ahead, they are capable of doing serious damage. Very often by mid-summer the grubs have so completely destroyed the grass roots that large sections of the turf can be rolled up like carpet. Cold weather again sends the grubs to lower levels for the winter and in the spring of the third season they return to the surface where they feed for only a few weeks and then pupate. Later in the summer they change to the adult stage, but these adults do not leave the pupal cells until the following spring. Most of our common species follow this three year life cycle and as a rule grub damage is most severe the second year, i. e., the year following the season of heavy June beetle flights.

Don't Treat Unnecessarily

Efficient control of white grubs presupposes the early detection of the infestation, otherwise emergency methods and increased quantities of insecticides will be required. This, however, does not necessarily mean that all turf should be treated as a general precaution against a possible attack by grubs. Where grubs are a serious problem year after year such a practice is unquestionably commendable but in areas where grubs seldom if ever do appreciable damage to grass-lands wholesale treatment is unwarranted. In such areas the practice of sampling the turf and checking the grub population each year would seem to offer a more logical approach to the problem. The finding of a few stray grubs would serve as a warning, whereas the finding of several grubs per sq. ft. would be interpreted as a demand for immediate treatment of the turf.

Of all the insecticides that have been tested for grub control, acid lead arsenate repeatedly has given the most satisfactory results. When applied early as a preventative measure, 5 lbs. of lead arsenate per 1,000 sq. ft. of turf has given good control; but when an infestation is not detected until the grubs have attained considerable growth and injury is quite

conspicuous, applications as high as 10 pounds per 1,000 sq. ft. are frequently recommended. The manner of applying the poison is unimportant. It may be applied as a dry dust, a spray, or in combination with a topdressing or fertilizer. It is, however, important that the poison receive uniform distribution and that it be washed into the soil, preferably without flooding which might result in large accumulations of the poison in low spots.

Manufacturers Take Over Course at Ohio Equipment Show

GOLF course superintendents and club officials within a 300 mile radius of Columbus, Ohio, are expected to attend an outdoor equipment demonstration to be staged at the Brookside CC, Columbus, Monday, May 22.

This event, sponsored by the Ohio Golf Course Supt's Ass'n, will be handled differently than other outdoor exhibits, in that each manufacturer will be allotted a separate fairway from tee to green to demonstrate his product. Lots will be drawn for selection and the dealers must depend upon their own promotional ability to attract the spectators. Material dealers not handling moving equipment will be given locations suitable for their displays also.

Mack Burke, veteran greenkeeper at Brookside, will act as ring-master for this equipment circus and all manufacturers will be required to furnish their own "barkers" and "pitch-men".

Plans for the evening include a banquet at the clubhouse with Fritz Howell, state A.P. sports chief, acting as toastmaster. "Red" Troutman, president of the American Baseball Assn', is slated to speak, along with his honor, Governor of Ohio, John Bricker.

The Columbus contingent is secretly nourishing a plan to promote the national G.S.A. annual conference some time in the near future in conjunction with an outdoor show, and consequently is making every effort to make this event a gala success.

Lawrence Huber, Wyandot CC, Columbus, president of the O.G.S.A., and John McCoy, secretary-treasurer, greenkeeper at the University GC, Columbus, are assisting Mack Burke with his plans for this interstate event.