around the prothorax (Fig 1a), around the petiole just in front of the node, between the petiole and post-petiole, between the post-petiole and the 1st gastric segment (Fig. 1b), and around each leg (Fig. 1b). Major workers and reproducitives can be marked around either the femur or tibia, bringing the total number of locations to 16 for these individuals; however, the tibia of smaller workers is too easily damaged to risk placing a tie there.

In all cases care must be taken to make the tie tight enough to stay on—particularly around legs where ties can be easily pulled off—but not so tight as to damage the body or constrain movement. Combinations of ties with only 1 color wire allow discrimination of ca. 100 individuals. Employing wires of different colors would expand the possible combinations enough to allow identification of most of the individuals in a small colony.

Over 90% (93/100) of the workers from all size classes and 100% (15/15) of the reproducitives marked in this fashion survived the operation, retained their markings, were reaccepted by nestmates and resumed normal functions in their home colonies. Five workers died from injuries incurred during the marking procedure and 2 workers lost their ties. Nestmates pull at the ties in the course of normal allo-grooming; however, marked individuals do not receive undue attention from nestmates, nor were marked ants ever attacked or killed.—JOHN T. MIRENDA AND S. B. VINSON, Dept. Entomology, Texas Agricultural Experiment Station, Texas A&M University, College Station, TX 77843.

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ATTRACTION OF SORGHUM MIDGE PARASITES TO SORGHUM HEADS—(Note). The larva of the sorghum midge, Contarinia sorghicola (Coquillet), is a serious pest of grain sorghum. The small adult fly deposits her eggs individually under the glumes. The maturing larvae feed on the developing seed and may destroy all the grain on a head. However, efforts to make use of natural enemies of the midge have not been successful. Aprostocetus diplovidis Crawford, the predominant hymenopteran parasite in South Georgia, parasitizes only ca. 17% of the population of the sorghum midge yearly (Wiseman et al. 1979, Environ. Ent. 7: 820-2). Because information about the interrelationships among the sorghum plant, the sorghum midge, and its parasite might facilitate utilization of parasites for midge control, we investigated the attraction of the midge and the parasite to sorghum heads and/or midge larvae.

The test consisted of a series of free choice evaluations in an open area in the field. Generally, 10 stakes were placed in a circle 6.2 m in diameter. A paper plate 30 cm in diameter was attached to each stake 0.9 m above ground so that it faced the center of the circle. Then either an insect-free spiklet cut from a blooming sorghum head or a midge larva dissected from a sorghum spiklet was placed in the center of each plate. Treatments were randomized among stakes. A plate with a blank center served as a check. Each plate, including the check, had a band of adhesive 10 cm wide surrounding the center area. Sorghum heads from which both midges and parasites were emerging were harvested daily and placed in the center of the circle as a source of test insects. Also, newly treated plates were put out daily.

The exposed plates were taken to the laboratory, and the numbers of
midges or parasites trapped in the adhesive were determined. The tests were conducted for 2 weeks and involved 33 replications (single plate) of each treatment.

An analysis of variance of the data revealed no significant differences (5% level) in midge attraction to sorghum spikelets (603 trapped midges) or to blank plates (516 trapped midges) and no significant differences between plates with midge larvae (247 trapped midges) and blank plates (265 trapped midges).

However, parasite attraction was significantly different when plates containing sorghum spikelets (636 trapped wasp parasites) were compared with blank plates (71 trapped wasp parasites). Also, plates containing midge larvae (81 trapped wasp parasites) were not significantly more attractive than blank plates (75 trapped wasp parasites).

Therefore, *A. diplosidus* was highly attracted from ca. 3.1 m to sorghum, which is the host plant of the midge, but was not attracted at this distance to its larval host. Studies of parasites of other insect species suggest that there may be a sequential response, first to the plant and then to the parasite host on the plant. (Schuster and Starks, 1974, Environ. Ent. 3: 1034-5).—W. W. McMillian and B. R. Wiseman, Agricultural Research, Sci. and Educ. Admin., USDA, Tifton, GA 31794.

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**A sampling technique for mole crickets and other pests in turfgrass and pasture**

Infestations of mole crickets, *Scapteriscus acutus* Rehn and Hebard and the changa, *S. vicinus* Scudder, are sporadic, unpredictable, and difficult to detect at the optimum time control measures should be applied in the early summer. Most nymphs are 1st to 3rd instars at this time and too small to cause noticeable tunnelling on the soil surface (Hayslip 1943, Fla. Ent. 26(3): 33-46). Usually infestations are not noticed until tunnelling activity is visible. When visible tunnels are present, damage has already occurred; the nymphs are approaching maturity and are more difficult to control.

Several methods of surveying for mole crickets have been suggested. Pitfall traps are impractical because of non-uniform infestations over large areas. Digging is not feasible because of the mole cricket's vertical and horizontal mobility. Light and sound traps are only effective for surveying flying adult populations in late fall and early spring. Pyrethrins have been labeled to detect turf insects, but availability and price makes this material impractical. Reported here is an inexpensive alternative to pyrethrins which can be used by homeowners, grounds maintenance personnel, and agricultural producers to detect turfgrass and pasture pests.

During August 1978, 5 materials were applied to Bermudagrass, *Cynodon dactylon* (L.), and evaluated for their ability to flush mole crickets to the soil surface. The following materials and amounts were used per 4 liters of water: Fifteen ml of synergised pyrethrins (1.2% pyrethrins and 9.0% piperonyl butoxide), 15 ml Ivory® dishwashing soap, 118 ml 4% apple cider

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1. Orthoptera: Gryllotalpidae.
2. Univ. Florida Agricultural Experiment Station Journal Series No. 1579.