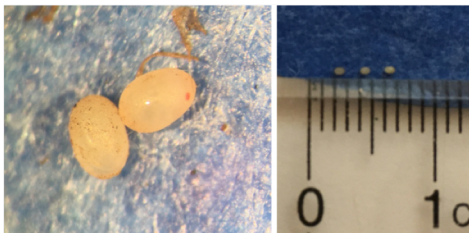
Peanut Burrower Bug

(Hemiptera, Cydnidae)
Pangaeus bilineatus Say

Description:
The peanut burrower bug is a sporadic but serious pest of peanut in Georgia where nearly 50% of all US peanut production occurs. Recent increases in the prevalence of burrower bug damage in the Southeast US have highlighted the need for a greater understanding of the insect's biology and ecology.

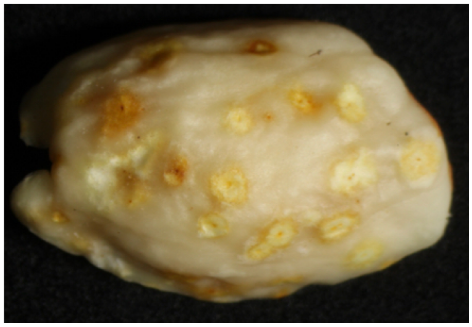


Immature stages – Eggs are oval shaped, creamy-white in color and approximately 1mm in length. The head and thorax of nymphs range from light brown to black, and the abdomen is creamy-white to gray. Wing pads are present on fifth instars.

Adult stages – Adult size varies considerably among field-collected specimens, but the average adult is approximately 5mm in length. Fully sclerotized adults are somewhat oval shaped, shiny black and have strong, spine-covered legs.

Biology:
Life Cycle – Reproductive and developmental biology are poorly understood. In laboratory colonies, females deposit eggs singly in the soil, and first instars emerge within 7 days. At 29°C and 40% relative humidity a generation is completed in approximately 30 days in the laboratory. Recent studies suggest that similar generation times occur in the field in Georgia (May-Aug). Overwintering occurs in the adult stage, though nymphs have been observed in Georgia as late as mid-November. Adults are readily collected in light traps from May through September in South Georgia. Though sex ratio varies from month to month, females make up 60% of the population collected in light traps over multiple years. Primarily considered seed feeders, adults and nymphs also feed on root and stem tissue. The insect is native to North America, and research shows that it is widely distributed across Georgia's peanut producing counties.

Damage to Crop:
Peanut burrower bug host range is not well documented, but it is known to feed on a variety of cultivated plants including spinach, strawberry, cotton, and peanut. The insect uses its piercing-sucking mouthparts to feed directly on developing peanut seed. Feeding in peanut does not typically result in significant yield reduction, but rather produces lesions on kernels that lead to reduction in quality grade. Injury on greater than 3.49% of kernels (by weight) results in a grade reduction and a loss in value of approximately $300 per ton.



Management:
No economic injury levels exist for burrower bug in peanut, and there are no cost-effective methods for monitoring the pest. The only insecticide that has provided control in field

settings is the granular formulation of the organophosphate chlorpyrifos. Cultural management tactics include the use of deep tillage and irrigation, but neither of these practices nor the use of insecticide provides complete control. Efforts are currently underway to develop a risk assessment tool to predict the occurrence of damaging populations.

Mark Abney, Extension Entomologist, University of Georgia, 2018