2. The proboscis is formidable, the styli stout, and both mandibles and maxillae are dentate. In the normal male, the proboscis with its styli is more delicate, and in this species no true teeth are recognizable.

3. The shape of the segments of both palpi, which in the male, is more slender. In the normal male of this species, the third segment is not enlarged.

4. Both antennae are not plumose. Furthermore, the shape of the segments is like that of the female; the pedicel is not as large as that of the male, and each one of the last five segments is distinctly elongated. In the (normal) male of this species, the pedicel is very large, the third through the twelfth segments bear vertices; the thirteenth through the fifteenth segments are the only segments which are excessively elongated and narrow.

These two gyandromorphs are deposited in the U. S. National Museum.

**Literature Cited**


**Additional New Records of Treehole Culicoides (Diptera: Ceratopogonidae) in Northern Florida**

William W. Smith
Department of Entomology, University of Florida

Three additional species of Culicoides not previously reported from Florida have been recovered from treeholes in Alachua County, Florida since C. parvensis (Gould) (1965) was reported. These species are C. debilipulpis Lutz, C. himanai Khalaif, and C. snooi Wirth and Jones.

The four females of C. debilipulpis reported were recovered from debris samples taken from a laurel (Quercus laurifolia Michx.) oak stomp hole, laurel oak treehole, a live oak (Quercus virginiana Mill.) treehole, and a cavity in a magnolia (M. grandiflora L.) tree in the San Felasco Hammock about five miles northwest of Gainesville, Florida. They emerged as adults during February and March, 1965 from the samples taken in October, and December, 1964. Many additional specimens apparently of this species have been taken in light traps and in treehole samples from several other locations in Alachua County during each month of this year to date (September, 1965). It is believed that adults are present most of the year in this region.

One male and three females of C. himanai were recovered from debris taken from the base of a 4-foot vertical slit in a magnolia tree in the San Felasco Hammock. The sample was collected on December 5, 1964 and adults were obtained during March, 1965.

Three males and six females of C. snooi were obtained from treehole debris samples collected during October, 1964 and February and March, 1965. The males emerged in early March while the females were recovered in late March and early April, 1965. The males came only from the later samples while the females were from the samples collected in October, 1964. As no specimens have been obtained since April in light traps or treehole samples, it appears that this species may be present only during the spring.

Treehole samples were held in the laboratory in pint glass jars with organically-scrubbed tops at 72 ± 2°F. They were inspected at weekly intervals for the presence of adults and tap water was added to cover the debris shallowly at the time of inspection.

Identifications were made by Dr. Willis W. Wirth, U. S. National Museum, and Dr. F. S. Blanton, University of Florida.

These findings resulted from studies of the bionomics of inland species of Culicoides supported in part by NIH Grant GM 12322-01.

**Reference Cited**


**A Simple Apparatus for Obtaining Emergence of Large Numbers of Simulium Adults from Non-Immersed Pupae**

George J. Burton
National Cancer Institute, National Institutes of Health, Bethesda, Maryland 20014

Rearing of adult Simulium from pupae on vegetation collected in the field has been carried out in several ways by different investigators, without using an aquarium. To match an emerged adult with its pupa, the latter is usually placed individually in a small vial or tube with one or two moistened absorbent cotton plugs, and with or without moist blotting paper (Dalmat, 1955; Hartley, 1955). For mass rearing, Mercer (1942) removed pupae in their cocoons with a scalpel, and placed them on damp blotting paper wrapped around the inside of a wide-mouthed or rectangular museum jar, which was then covered with mosquito netting of fine mesh. Lewis (1953, 1957) placed the vegetation to which the pupae were attached in a tube or jar covered with muslin.

In an airconditioned room or in a dry atmosphere, it was found that the pupae dried out