

**A PRELIMINARY LIST OF THE TABANIDAE (DIPTERA)
OF FLORIDA***

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No list of the Tabanidae (Horse-flies and allies) of Florida has been published since that of C. W. Johnson in his "Diptera of Florida" of 1913, and as several new species and many species new to the state have been discovered in the subsequent 22 years, it is thought advisable to bring our knowledge of these interesting insects up to date. I have included all published records available to me where such records seemed of value, but in a few cases where the determination seemed doubtful I have placed the species at the end of the list. Records followed by a number in parenthesis have been previously published, the number referring to the bibliography. All other records are from specimens in my own collection or in the United States National Museum. In the case of very abundant species, only records which indicate the extent of distribution and the earliest and latest dates of capture are included.

The 66 species here recorded are divided among 7 genera and subgenera as follows: 22 *Chrysops*, 1 *Diachlorus*, 1 *Haematopota*, 1 *Dicladocera*, 1 *Whitneyomyia*, 1 *Microtabanus*, and 39 *Tabanus*. Considering that very little intensive collecting has been done in the state, this number compares very favorably in richness with the fauna of other states. Johnson lists 85 species of 4 genera for New England, 82 species of 7 genera have been taken in New Jersey, and the North Carolina lists of Brimley and Sherman record 60 species and 3 genera. As more or less intensive collecting in these areas has been done, it seems likely that similar methods applied here will materially increase this list.

I am greatly indebted to Dr. Alan Stone, of the United States National Museum, for aid in checking the determinations of many species, and for records on specimens in the Museum's collections, as well as for many other courtesies.

Chrysops bistellata Daecke.

Lloyd, IV-18 to V-21-35; Monticello, IV-27-35.

Chrysops brimleyi Hine.

Lloyd, IV-17 to V-12-35; Monticello, III-21 to IV-30-35.

Chrysops callida O. S.

St. Augustine (1); Volusia, VI-11 (5); McIntyre, IV-28-35.

*Contribution from the Dept. of Entomology, Florida Agricultural Experiment Station.

Chrysops celer var. **nigroptera** var. nov.

Three female specimens before me differ from typical *celer* in the following respects: The antennae are entirely black, the pollen on face and frons is rich yellow, and the pile on the pleurae is a deeper red. The wings, with the exception of the apex beyond the cross-band and a small spot near the distal end of each basal cell, are entirely black, though this infuscation is somewhat lighter in the anal area. Specimens of typical *celer* are at hand from Quebec, Mass., N. Y., Conn., and N. Carolina, and the present form seems sufficiently distinct to warrant at least varietal standing. The Holotype is to be deposited in the M. C. Z., one Paratype in the U. S. N. M. (No. 51237), and the remaining Paratype in the author's collection. All specimens were taken at Lloyd, Jefferson Co., Fla. IV-30-35.

Chrysops divisa Walk.

St. Augustine; Jacksonville; Crescent City; Eagle Lake; Lake Mary, March (1); Gainesville, V-8-25; Monticello, III-24 to IV-25-35; Lloyd, IV-18 to IV-30-35.

Chrysops dorsovittata Hine.

Jacksonville (1); Monticello, IV-15 to IV-24-35; Lloyd, IV-17 to V-12-35.

Chrysops flavida Wied.

Abundant throughout the state, especially along the coast. Jacksonville (1); Big Pine Key, VII-1-35; Paradise Key, III-7-30; Monticello, IV-25 to IX-18-35.

Chrysops fuliginosa Wied.

Anastasia Island, St. Augustine, IV-4-12 C. P. Whitney. A salt-marsh species.

Chrysops fulvistigma var. **dorsopuncta** var. nov.

Differs from typical *fulvistigma* Hine only in the markings of the abdomen. In the typical form there are two black triangles on either side of the median line on the dorsum of the 2nd segment, their bases on the posterior margin, and their apices reaching about $\frac{3}{4}$ the distance to the anterior margin. In the present form these markings are replaced by a single, black, median quadrilateral or truncated triangle, whose apex reaches the anterior margin of the segment. In addition, the extension of the black laterally along the posterior margin of the 2nd segment and the median yellow spot on segment 3 often found in the typical form, are lacking, although on some specimens there is a trace of yellow on the sides of segment 3. The typical form was described from North Carolina, and there are specimens of it from Oxford, Miss., before me, while the present form has been taken in Georgia (U. S. N. M.) and Louisiana (Hine 1907).

Holotype and 3 Paratypes in the M. C. Z. Lloyd, Jefferson Co., Fla., V-28-35. 3 Paratypes in the U. S. N. M. (No. 51266) Lloyd, V-21 and V-28-35. 20 Paratypes in author's collection, Lloyd, V-21 to VI-23-35.

Chrysops geminata Wied.

Monticello, IV-23 to V-14-35; Lloyd, IV-30 to V-21-35.

Chrysops hinei Daecke.

Sand Point, II-18 (1); Alachua Co., XI-18-29 (U. S. N. M.); Monticello, VIII-30 to IX-21-35.

Chrysops lugens Wied.

Volusia, V-11 (1); Georgiana, VII-17-82 Wittfeld; West Lake, Cape Sable, II-25-19 H. S. Barber; Paradise Key, IV-20, 23-18 T. E. Snyder (U. S. N. M.).

Chrysops montana O. S.

Monticello, V-13-35.

Chrysops obsoleta Wied.

Brevard Co., II-22-29 J. Howard (U. S. N. M.).

Chrysops parvula Daecke.

St. Augustine, III-15 (1); Wewahitchka, V-26-35; Blountstown, V-26-35.

Chrysops pikei Whit.

Monticello, IV-16 to IX-18-35; Lloyd, IV-30 to VIII-9-35.

Chrysops pudica O. S.

This species is very variable, and Florida specimens at hand indicate that there are several species involved, but as there are three names, *dimmocki* Hine, *sackeni* Hine, and *cursim* Whitney, which have been applied variously to the group, it seems better to defer discussion to a subsequent time. Specimens are at hand from all sections of the state, with dates ranging from April to September.

Chrysops reicherti sp. nov.

Female. First two and basal part of the third antennal segment yellowish brown, the apex blackish. First segment about $1\frac{1}{2}$ times as long as the second, the third slightly exceeding the lengths of 1 and 2 together. First two segments not appreciably swollen. Pollen of face and frons greyish yellow, the facial and frontal callosities clear yellow, but the ocelli black. Palpi and proboscis reddish brown. Legs dirty yellowish brown, the distal $\frac{1}{2}$ of the fore tibiae, all tarsi, and the hind femora somewhat darker. Thorax and scutellum yellow brown, the pleurae and four broad dorsal bands covered with yellow pollen. Abdomen with the first segment light yellow brown, the second pale straw colored, with two oblique darker areas on the posterior half. In dark specimens these areas are roughly shaped like two half arrowheads, their points on the lateral margins, and their barbs towards the middle, leaving a broad, roughly oval area of the ground color between their bases. In many specimens these markings are barely indicated. Segments 3 to 6 yellow brown, with darker, slightly oblique areas on the anterior part, and with lighter hind and lateral margins, the former expanding into ill-defined dorsal triangles. The sparse hairs of the abdomen are black over the dark areas, golden elsewhere. Beneath, the abdomen is brownish yellow, darker on the sides, and with ill-defined darker patches medially on segments 3 to 6. The wings have the costal cell light brown, the other markings blackish. The first basal cell is about $\frac{1}{3}$ and the second about $\frac{1}{2}$ basally infuscated. The cross-band is broad, reaches the hind margin in the fourth posterior cell, and its outer border is distinctly sinuate. The apical spot fills the marginal cell, and extends about half-way across the second submarginal, but there is a secondary lighter infuscation which fills the rest of the cell and covers the whole distal and hind marginal area of the wing to include the distal $\frac{1}{2}$ of the anal cell. This leaves the hyaline triangle as a series of clear areas beginning in the first submarginal cell, and becoming progressively smaller

as they extend backward along the distal margin of the cross-band. The fifth vein and base of the fifth posterior cell are also darkly infuscated.

This species seems closely related to *flavida* and *brunnea*, but it differs constantly from both. From *flavida* it may be distinguished by the more greenish yellow of the body, more slender antennae, sinuate outer border of the cross-band and generally darker wings. and by the dark hind femora. The swollen antennae and uniform orange yellow abdomen of *brunnea* distinguish that species. Named in honor of two young friends to whom I am indebted for many fine Tabanids.

Holotype and 3 Paratypes to be deposited in the M. C. Z. Monticello, Jefferson Co., Fla., V-27-35, VII-10-35, VIII-24-35, and Greenville, Madison Co., Fla., V-29-35. 4 Paratypes in the U. S. N. M. (No. 51265) 1 Greenville, VI-12-35; 1 Monticello, V-13-35; 2 Monticello, VIII-24-35. 40 Paratypes in author's collection from various localities in Leon, Jefferson, and Madison Counties, May 13 to August 23.

Chrysops ultima Whit.

West Palm Beach, IV-18 C. P. Whitney (Type); IV-6-18 (U. S. N. M.); St. Augustine; Paradise Key, III-20 to IV-4 (U. S. N. M.).

Chrysops univittata Macq.

Capps, IV-10 to VI-5-35; Monticello, IV-10, 27-35; Lloyd, IV-17 to V-21-35.

Chrysops vittata Wied.

Monticello, IV-4 to IX-18-35; Lloyd, VI-5 to IX-13-35; Wacissa, V-18-35; Blountstown, V-26-35; DeFuniak Springs, VI-19-35.

Chrysops vittata var. boridana Johns.

Horse Landing, St. Johns River, V-17-94; Palatka, V-19-94; Enterprise, V-11 (1) (Types); Gainesville, V-13, 22-25; VI-1-35; IX-27-34; Putnam Co., June (5); Wacissa, V-18 to VI-5-35; Greenville, VI-12-35; Wakulla Spring, VI-15-35.

The line of demarcation between the above two forms in Jefferson County is rather abrupt. North of the 50 ft. contour line I have taken only typical *vittata*, while south of that line *floridana* is far the more abundant. Intergrades are not abundant.

Diachlorus ferrugatus Fab.

The bites of this species, which is known as the "Yellow Fly", are extraordinarily irritating, producing far more local swelling and pain than those of the other Taabanids in this region. Abundant throughout the state. Stock Island, Key West, VII-1-34; Port St. Joe, V-20-35; Everglade, IV-6 (1); Wacissa, VII-20-35.

Di cladocera sexfasciata Stone.

Largo Key, Pinellas Co., III-4-25; Gulfport, Pinellas Co., III-8-25 (3).

Haematopota punctulata Macq.

Crescent City, June; Jacksonville (1).

Tabanus abdominalis Fab.

St. Augustine (1).

Tabanus acutus Bigot.

Apalachicola, VII-21-28 J. C. Bradley (U. S. N. M.).

Tabanus americanus Forst.

Abundant throughout the state. Paradise Key, III-7-25 (1); Monticello, VIII-5-35.

Tabanus annulatus Say.

Gainesville, J. R. Watson; Monticello, VII-10 to VIII-18-35.

Tabanus atratus Fab.

Abundant throughout the state. Key West, II-7; Titusville, XI-8 (1).
 Var. *fulvopilosus* Johns. West Palm Beach, III-25-18 C. P. Whitney.
 Var. *nantuckensis* Hine Ft. Myers, VI-21-20; Clewiston, VI-28-34; Paradise Key, IV-7-25.

Tabanus birdiei Whit.

West Palm Beach, March and April (4) (Types); St. Petersburg, IV-30-16 C. P. Whitney. Biscayne Bay; West Palm Beach, III-27 (1, as *cymatophorus*).

Tabanus bishoppi Stone.

Silver Springs, III-26-29; Ft. Pierce, IV-14-18 (2); Cleveland, IV-26-21; Gulfport, III-3, 9-25; Lake City, V-9-02; Dunedin, March (3); St. Augustine, IV-22-14 C. P. Whitney; Lloyd, IV-30-35.

Tabanus cayensis Fairch.

Stock Island, Key West, VII-1-34; Big Pine Key, VII-1-34 (Types).

Tabanus coarctatus Stone.

Immokalee, VI-16-33 (3) (Type); Monticello, IV-28 to VI-19-35; Wakulla, IV-28-35; Wewahitchka, V-18-35; Gainesville, J. R. Watson.

Tabanus coffeatus Macq.

Waldo, VI-21; Jacksonville (1); Gainesville, III-24-08; Greenville, IV-25-35; Port St. Joe, VI-19-35; Monticello, VIII-1, 5, 27-35; IX-21-35.

Tabanus endymion O. S.

Fruitville, VIII-11-30 Nottingham and Oman; Indiantown, V-24-18; West Palm Beach, V-11-18; Buena Vista, Miami, C. Mosier; (all in U. S. N. M.). Monticello, VIII-6-35.

Tabanus crepuscularis J. Bequaert.

Abundant throughout the state. Paradise Key, III-19-26; Monticello, IX-10-35.

Tabanus floridensis Hine.

Fort Meade, IV-4-09 (Types); Gainesville, IV-1-35 F. N. Young.

Tabanus fronto O. S.

St. Augustine; Charlotte Harbor, March (1); Beresford, IV-28-79 G. D. Hulst; Gainesville; Greenville, V-1, 18-35; Big Pine Key, VII-1-34; Wacissa, VII-20-35; Monticello, VI-19 to VIII-18-35.

Tabanus fulvulus Wied.

Ft. Myers, IV-14 (1); Wakulla, IV-18, 24-35; Greenville, IV-25 to V-12-35; Monticello, IV-24 to V-30-35.

Tabanus fumipennis Wied.

St. Augustine, V-12; Lake Harney, V-4 (1); Coconut Grove, VII-5-29; Belle Glade, VII-15-34; Paradise Key, IX-9, 16-34 W. J. Clench; Deep Lake, V-27-34; Clewiston, VI-25-34 A. R. Livingston; Miami, VII-19-34; Pinecrest, Munroe Co., VII-19-35 F. N. Young.

***Tabanus gladiator* Stone.**

Indiantown, VI-18-33 D. M. Bates; Monticello, VII-16 to IX-10-35.

***Tabanus gracilis* Wied.**

Silver Palm, VI-11-34; Coconut Grove, VI-15-34, VII-6-35; Ft. Lauderdale, VI-29 to VII-7-33, VI-15 to VIII-25-32; Miami, VIII-12-34, IX-3-34; Gainesville, VII-13-34; Palatka, VII-7-35; Lloyd, VIII-4-35; East Point, VII-28-35.

***Tabanus imitans* Walk. (*fuscopunctatus* Macq.)**

St. Augustine, III-15; Tick Isl., V-12; Georgiana; Sand Point, III-21; Crescent City, IV-22; Chokoloskee; Ft. Myers, III-31 (1); Lake City, V-6-99; Lanark, IV-28-35; Lloyd, V-12-35; Monticello, V-14, 27-35.

***Tabanus johnsoni* Hine.**

St. Augustine (Type); Everglades, V-12 W. T. Davis; Indiantown, VI-18-33 D. M. Bates; Gainesville, X-21-29; Coconut Grove, VI-24-34; Greenville, IV-25-35 (in spider web).

***Tabanus lacustris* Stone.**

Lakeland; St. Cloud, V-30-33, IV-30-33; Sebring, VI-14-33 (3) (Types); East Point, VII-28-35.

***Tabanus longiusculus* Hine.**

Monticello, V-17-35, VI-30-35.

***Tabanus megerlei* Wied.**

St. Augustine; Lake Mary, March; Eagle Lake; Palatka (1); Monticello, IV-5-35.

***Tabanus melanocerus* Wied.**

St. Augustine; Miami (1); Monticello, V-25 to VII-22-35; DeFuniak Springs, VI-19-35.

***Tabanus molestus* Say.**

Tick Isl., V-12; Juniper Creek, V-15 (1); Monticello, IV-24 to VII-30-35; Greenville, IV-25-35; Lloyd, V-21-35; Wacissa, V-18-35.

***Tabanus mularis* Stone.**

Hilliard, VIII-19-30 Nottingham and Oman; Hillsborough Co., XI-23-29 B. P. Moore; St. Cloud, IV-30-33 (all in U. S. N. M.); Jefferson Co., V-12 to VIII-4-35; Wewahitchka, V-26-35; DeFuniak Springs, V-26-35.

***Tabanus nigrescens* var. *atripennis* Stone.**

Monticello, VI-3-35.

***Tabanus nigrovittatus* Macq.**

Abundant in salt marsh areas throughout the state. Russels Key, Munroe Co., IV-20-33; Paradise Key, IX-16-34 W. J. Clench; St. Teresa, VIII-11-35, IX-22-35.

***Tabanus petiolatus* Hine.**

Monticello, V-27 to VIII-1-35; Greenville, V-29-35; Wacissa, V-18-35, VI-5-35.

***Tabanus psammophilus* O. S.**

Ft. Capron, IV-10-75 (Types); Lake Worth (1); Coconut Grove, V-16, 18-34, V-5-35; Biscayne Key, V-11-35 F. N. Young. On white sand beaches.

(To be continued)