Reprinted from THE ENTOMOLOGIST *for May 1967*

A NEW SPECIES OF CRANE FLY FROM GHANA (DIPTERA, TIPULIDAE)

By CHARLES P. ALEXANDER
(Amherst, Massachusetts)

Professor H. E. Hinton has submitted to me for species identification two adult specimens of a crane fly that had been reared by Mr. D. G. Gibbs in Ghana. These proved to represent an undescribed species of the genus *Antocha* Osten Sacken belonging to the subgenus *Orimargula* Mik which is described herewith as *Antocha* (*Orimargula*) *hintoni* sp.n., the immature stages to be discussed by Professor Hinton in a separate report. I am indebted to Mr. Gibbs and to Professor Hinton for the opportunity of describing this fly, the types being preserved in my personal collection through the generosity of Professor Hinton.

The genus *Antocha* includes numerous species that occur in all biotic regions with the exception of New Zealand, being best represented in the Palaearctic and Oriental regions while virtually lacking in the Neotropical. The subgenus *Orimargula* has numerous species in the Oriental and Ethiopian regions with fewer in the Palaearctic and Australasian. At the present time 17 species of *Orimargula* are known from Africa, two being from Madagascar. It seems certain that various further species remain to be discovered in this still poorly known faunal area. I am using the name *Antocha* rather than *Taphrophila* Rondani which was re-instituted in 1938 by Edwards. Osten Sacken proposed *Antocha* in 1859, basing it on a new species, *saxicola,* from eastern North America. *Taphrophila* was included by Rondani in the first volume of his *Prodromus Dipterologicae Italicae,* 1856, but was not discussed further in the subsequent volumes. Osten Sacken (1887. *Berl. ent. Z.,* **31**: 230-233) discussed the status of these Rondani names as they concerned the Tipulidae and indicated the reasons for not accepting certain of them, including *Taphrophila.* The type was designated as *Limnobia inusta* Meigen which is a well known species in the genus *Limonia.* A primary reason for accepting *Antocha* as being the valid name for this genus of flies is the recently adopted emendation to the Law of Priority in the 1961 edition of the International Code of Zoological Nomenclature, where, under Article 23(B) it is stated that "A name that has remained unused as a senior synonym in the primary zoological literature for more than fifty years is to be considered a forgotten name (*nomen oblitum*)". For a recent discussion of the problem, see Smith and Long, 1966 in list of references at end of this article). *Antocha* was the only name in use for this group of flies for more than 75 years and certainly should be retained. In 1923 Edwards proposed a new group, *Aphrophila,* for certain aquatic crane flies occurring in New Zealand, later found to be equally well represented in southern Chile and Patagonia. A question of homonymity may arise between this

Antocha (Orimargula) hintoni **sp.n.**

Size medium (wing of male 4·5 mm.); antennae short; general coloration of thorax obscure yellow, anterior half of praescutum dark brown; last tarsal segment of male without an epicondyle, claws with three major spines; wings pale greyish subhyaline, macrotrichia of veins restricted to the longitudinal veins beyond the cord; male hypopygium with two virtually terminal dististyles that are united basally.

Male.—Length about 6 mm.; wing 4·5 mm.; antenna about 1·0 mm.

Described from alcoholic material. Rostrum yellow; palpi black. Antennae (fig. 2) short, as shown by the measurements; scape obscure yellow, pedicel long, dark brown, flagellum black; flagellar segments beyond the first short, oval, apex truncated, decreasing gradually in size outwardly, the penultimate slightly longer, terminal segment elongate; verticils shorter than the segments. Head dark brown, vertex at narrowest point about three times the diameter of scape.

Pronotum obscure yellow. Mesonotum yellowed, praescutum broadly dark brown medially on anterior half; cephalic margins of scutal lobes weakly darkened. Pleura obscure yellow, the anterior and ventral parts of sternopleurite slightly patterned with brown. Halteres whitened. Legs with coxae and trochanters pale, the remainder light brown; last tarsal segment (fig. 4) without an epicondyle (an enlarged setiferous lobe near base); claw with three spines, the outermost longest, the others progressively smaller. Wings (fig. 1) pale greyish subhyaline, unpatterned; veins very pale brown. Longitudinal veins beyond cord with macrotrichia, including the outer half of R_3 and all of distal sections of R_{4+5}, M_{1+2}, M_3, M_4 and M_{3+4}. Venation: *m-cu* from one to one and one-half times its own length before fork of *M*.

Abdominal tergites brown, the posterior borders narrowly darkened medially, basal sternites yellowed, segments six through eight dark brown; hypopygium light brown. Male hypopygium (fig. 3) with the details as shown. Ninth tergite, *t*, transverse, with the characteristic inverted Y-shaped central area, each half of plate with about 14 strong setae, the small isolated triangular area at midregion of posterior border with about five further setae. Ninth sternite (not shown) semicircular in outline, with numerous marginal setae, those near apex longer and more powerful. Basistyle elongate, unmodified, about twice the length of the dististyles, provided with numerous scattered setae. Dististyles, *d*, virtually terminal in postion, united basally, the free parts closely approximated; outer style a gently curved sclerotized yellow rod, the longer inner style with setae distributed about as figured, the more terminal ones shorter and spinoid. Phallosome, *p*, including the relatively stout aedeagus and slender inner apophyses.

Holotype, alcoholic ♂, Sedumasi, Ghana, 2nd October 1966 (D. G. Gibbs). *Paratopotype*, a fragmentary alcoholic ♂, the parts mounted on a slide in balsam.

I take great pleasure in naming this crane fly for Professor Howard E. Hinton. The other West African members of the subgenus include *Antocha (Orimargula) longicornis* Alexander (Cameroon), with elongate antennae in the male and with a single spine on the tarsal claw; *A. (O.) schmidi* Alexander (Guinea), with an epicondyle on the last tarsal segment, claw with four spines, and the wing veins provided with abundant macrotrichia virtually basad to the arculus, and *A. (O.) quadrispinosa* Alexander (Angola), with an epicondyle, claw with four spines, and with restricted macrotrichia on the wing veins.

A summary of the nature of the last tarsal segment and number of major spines on the claw of the male as found in the African species is given.

A. Species wth an epicondyle (a conspicuous lobe on ventral surface of last tarsal segment in male), the figure given indicates the number of major spines on claw.

A. (O.) brevicornis Alexander (Mozambique) 3
A. (O.) indumeni Alexander (South Africa) 3
A. (O.) kraussi Alexander (Madagascar) 1
A. (O.) multispina Alexander (Tanganyika, Uganda) 6-7
A. (O.) nigristyla Alexander (Kenya) 4
A. (O.) quadrispinosa Alexander (Angola)
A. (O.) schmidi Alexander (Guinea) 4
A. (O.) transvaalia Alexander (South Africa) 3

B. Species without an epicondyle.

A. (O.) hintoni sp.n. (Ghana) 3
A. (O.) longicornis Alexander (Cameroon) 1
A. (O.) melina Alexander (Southern Rhodesia) 1
A. (O.) pauliani Alexander (Madagascar) 1
A. (O.) setosa Alexander (Mozambique, Tanganyika) 1
A. (O.) tanycera Alexander (Northern Rhodesia) 1
A. (O.) venosa Alexander (South Africa: Natal) 2

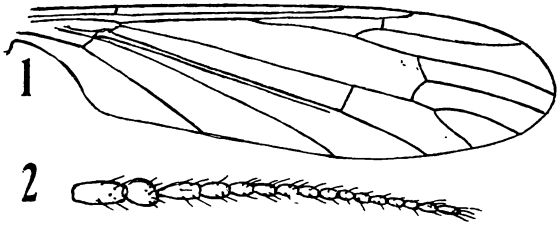
The nature of the epicondyle and claws of the male presently not known for *A. (O.) delibata* Riedel (Tanganyika, Kenya) or *A. (O.) griseipennis* Alexander (Ethiopia).

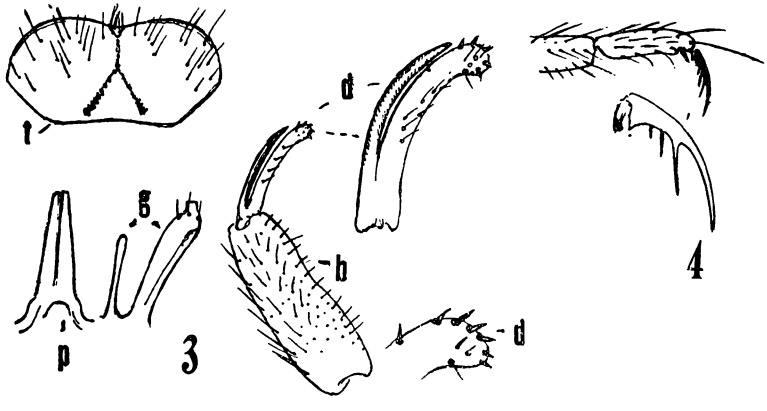
References

ALEXANDER, C. P., 1920. The crane-flies of New York, II. *Mem. Cornell Univ. agric. Exp. Stn.*, **38**: 799-806; 1956. Tipulidae. *Ruwenzori Expedition 1934-35*, **1** (7): 245-247. Brit. Mus. (Nat. Hist.); 1963. The crane flies of Angola. *Publçoes cult. Co. Diam. Angola*, **66**: 30, 31, 43, 44; 1964. Tipulidae. *South African Animal Life*, **10**: 338-341, Lund. BANGERTER, H., 1929. Mücken-Metamorphosen II. *Konowia*, **8**: 5-6. HINTON, H. E., 1957. The structure and function of the spiracular gill of the fly *Taphrophila vitripennis*. *Proc. Roy. Soc. (B)*, **147**: 90-120; 1965. The spiracular gill of the fly *Orimargula australiensis* and its relation to those of other insects. *Aust. J. Zool.*, **13**: 783-800; 1966. The spiracular gill of the fly *Antocha bifida*, as seen with the scanning electron microscope. *Proc. R. ent. Soc. Lond. (A)*, **41**: 107-115. SMITH, H. M. & LONG, C. A., 1966 A stable zoological nomenclature for general animal science. *Bioscience*, **16**: 332-334.

name and *Taphrophila* Rondani since both are derived from the same Greek words meaning 'foam loving'.

The immature stages of all species of *Antocha* as presently known are of exceptional interest. All are aquatic, the larval stage lacking spiracles while the pupa has the spiracular gills or breathing horns variously branched, the maximum number of such branches or filaments as presently known being eight. The first account of the early stages in this genus was by the writer (Alexander, 1920), based on the generotype *Antocha* (*Antocha*) *saxicola* Osten Sacken, of the eastern Nearctic region. Bangerter (1929) discussed briefly the immature stages of the subgenerotype of *Orimargula, Antocha* (*Orimargula*) *alpigena* (Mik), of central Europe. In a series of three outstanding papers, Hinton (1957, 1965, 1966) has described the spiracular gill in three different members of the genus, *A.* (*A.*) *vitripennis* (Meigen), of Europe, *A.* (*A.*) *bifida* Alexander, of eastern Asia, and *A.* (*O.*) *australiensis* Alexander, of eastern Australia.





Text-figures 1-4. *Antocha* (*Orimargula*) *hintoni* sp.n. Fig. 1. Wing. Fig. 2. Antenna of male. Fig. 3. Male hypopygium details. Fig. 4. Terminal segments of tarsus and claw of male. Symbols: Male hypopygium—*b*, basistyle; *d*, dististyle; *g*, gonapophysis; *p*, phallosome; *t*, ninth tergite.