

THE SOUTH AFRICAN SPECIES OF THE GENUS
DOLICHOPEZA CURTIS (TIPULIDAE, DIPTERA).

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In the development of our knowledge of the crane-fly fauna of South Africa, the late Dr. L. A. Péringuey played a very important and critical part. Almost all of the species that have been described from the Cape region during the past half century were either collected by Dr. Péringuey himself or submitted to specialists by him in behalf of the collections of the South African Museum. The first of these collections was discussed by Bergroth in 1888 (*Entomol. Tidskrift*, 9: 127-141, pl.). More recently (1917-1921) the writer has published a series of three papers on the crane-flies of South Africa (*Ann. S. Afr. Mus.*, 17, part 2: 139-184, pls. 10-14; 1917; *Ibid.*, 18, part 2: 181-230, pls. 3-4; 1921; *Ibid.*, 18, part 2: 231-234, fig.; 1917) based entirely on the important collections of the South African Museum. At the suggestion of Dr. Péringuey, the writer had planned and partly written a revision of the crane-flies of South Africa, a work that was to have been published in the Museum Annals, with an introduction on the faunal areas by Dr. Péringuey. It has been keenly realized in the preparation of this work that our knowledge of these fragile, long-legged flies occurring in the Union of South Africa is still very fragmentary, especially as regards the detailed distribution, both geographical and seasonal, of the small and medium sized species. The South-west District of the Cape Province, and Natal, will certainly prove of exceptional interest. The writer would appreciate very much the co-operation of entomologists and collectors in any parts of South Africa in making known this interesting fauna.

Crane-flies may be told from other similar and related flies by their usually excessively long and easily broken legs, a feature that has made the group undesirable to many entomologists who have no appreciation for any but perfect specimens. However, no individuals should be discarded, no matter how broken or maimed they may be, because the characters most needed for final specific determination (wings and male hypopygia) are such that some mutilation of the specimen is often required in any case. Crane-flies are notable lovers of wet and moist situations and many may

be swept from rank vegetation along streams and similar situations. Mountainous and hilly regions support a peculiar fauna of especial interest and the variety of species changes notably as one ascends a given range. The species of the higher exposed peaks are apt to be nearly wingless and are of especial interest. The various species of Tipulidae show a tremendous range in size, from tiny midge-like pygmies to giants that spread more than three inches across their wings. Because of their fragile nature, it is best to reserve a bottle or vial entirely for crane-flies or at least not to mix them with Lepidoptera or heavy-bodied specimens of other orders. When dead the specimens should be placed in small paper triangles such as are used in papering butterflies, with the *place*, *altitude* (if possible), *date* and *collector's name* written clearly on the outside of the envelope. A number of these flies from a given place on the same date may be placed in a single envelope, especially when approximately of a size. When a sufficient number of triangles to warrant a shipment have accumulated, they should be placed in a strong wooden or metal box between thin layers of cotton to prevent shaking, and, if available, a small amount of powdered naphthalene should be sprinkled in to keep ants, book-lice and other destructive pests away. When received by the specialist, these specimens are relaxed and mounted for study. Newly killed specimens thus preserved in triangles and packed as described above always travel more safely through the mails than do pinned and spread specimens. Moreover, a rather considerable number can be sent in a single small parcel which may be forwarded to any part of the world at Sample Post rate. It is to be hoped that the work of a revision of the Tipuloidea of South Africa, as planned and desired by the late Director of the South African Museum, will receive sufficient impetus to be carried through to a final successful conclusion. Types and uniques should be preserved in a safe repository, of which the South African Museum must be considered as being a splendid example.

In the South African faunal subregions, three of the four existing families of the superfamily Tipuloidea have been discovered. The primitive Tanyderidae are represented only by the remarkable endemic genus *Péringueyomyia* Alexander. The Ptychopteridae are known to date only by a single species of *Ptychoptera* in the eastern districts. The greatest number of species fall in the family Tipulidae, the subfamilies Limoniinae and Tipulinae each being represented by an abundance of species, the third group, the Cylindrotominae, not having yet been discovered in Africa. The

Limoniinae are represented by the three tribes Limoniini, Hexatomini and Eriopterini, the genera *Dicranomyia*, *Pseudolthnophila*, *Erioptera* and *Gonomyia* being especially characteristic. The Tipulinae are best represented by species of *Dolichozeza*, *Longurio*, *Tipula* and *Nephrotoma*. A very considerable number of endemic genera and subgenera of Tipuloidea occur in South Africa.

In the present small paper, the writer wishes to discuss a subgenus of crane-flies, *Trichodolichozeza* of the genus *Dolichozeza* Curtis. No species of the typical subgenus have been found in South Africa. The subgenus *Trichodolichozeza* is confined to the Ethiopian Region and reaches its maximum of speciation, as known, in South Africa. There probably remain still others of these relatively large, delicately built flies, with excessively long and slender legs. Nothing has been recorded of the habits of the members of the subgenus, but judging from the related form, *Dolichozeza*, the flies should be found in damp, darkened places as beneath bridges, in culverts, outhouses, around the buttresses of great forest trees, especially where these have been overturned in storms and left cavernous hollows about their roots, in caves and crevices in and near the shaded banks of streams, and in similar darkened and secluded situations. In such retreats, these flies will presumably be found, either swarming ethereally up and down or clinging to the roof of the hollow by one or two pairs of legs.

The types of the four new species described at this time are preserved in the collection of the South African Museum.

Family TIPULIDAE

Subfamily TIPULINAE

Tribe TIPULINI

Genus *DOLICHOZEZA* Curtis
1825 Brit. Entomol., p. 62.

Subgenus *TRICHODOLICHOZEZA* Alexander

1917 Ann. S. Afr. Mus., vol. 17, part 2, p. 157.

A Key to The South African Species of Trichodolichozeza.

1. General coloration light orange-yellow, including the head; thoracic stripes scarcely indicated; wings tinged with yellow; tip of R_2 entirely preserved. (Ann. S. Afr. Mus., vol. 18, part 2: 212-213; 1921) (Natal).

D. (T.) aurantiaca Alexander.

General coloration darker, the thoracic notum dark brown or yellow with dark brown stripes; head usually marked with dark (unknown in *thoracica*); wings not strongly tinged with yellow; tip of R_2 usually more or less atrophied. 2.

2. Mesonotum uniformly dark brown; head dark brown, the subglobose vertical tubercle bright yellow, sending a pale yellowish brown median line back to the occiput; (male hypopygium with the ninth tergite flattened, the median lobe projecting but quite smooth; inner dististyle weakly chitinized).

(Cape Colony, *Oudebosch*) **D. (T.) flavifrons**, sp. n.

Mesonotum yellow, with three or four brown stripes on the praescutum; head not coloured as above (unknown in *thoracica*). 3.

3. Flagellar segments dark, the tips of the basal segments narrowly pale to give a bicolorous appearance; head yellow with two large brown blotches on vertex, the inner margins of the eyes broadly yellow; (tip of R_2 preserved; median area of ninth tergite of male hypopygium slightly produced and conspicuously denticulate). (Natal).

D. (T.) picticeps, sp. n.

Flagellar segments uniformly darkened; head not marked as above (unknown in *thoracica*). 4.

4. Petiole of cell M_1 more than one-half the cell; antennae of male elongate; head uniformly yellow; (male hypopygium with the ninth tergite small, broadly notched medially, the margins quite smooth) (Cape Colony, *Cape Town*).

D. (T.) péringueyi, sp. n.

Petiole of cell M_1 from one-third to one-fifth the cell; antennae of male not so elongate; head marked with darker (unknown in *thoracica*). 5.

5. Median praescutal stripe entire. (Ann. S. Afr. Mus., vol. 17, part 2: 157-158; 1917) (Cape Colony, *Caledon*).

D. (T.) hirtipennis Alexander.

Median praescutal stripe bifid except at the ends; (ninth tergite of male hypopygium highly arched, the margin smooth medially; a ventral chitinized ledge beneath; inner dististyle heavily chitinized, longitudinally grooved and ribbed).

(Cape Colony, *Humansdorp*) **D. (T.) thoracica**, sp. n.

The male hypopygium is more intricate in structure in *Dolichocheza thoracica* and *D. picticeps* where there is a complex

ventral shelf lying ventrad of the dorso-tergal plate, more simple in structure in *D. flavifrons* and *D. péringueyi* where there is only a spinous lobe ventrad of each end of the ninth tergite.

Dolichocheza (Trichodolichocheza) flavifrons, sp. n.

Vertex dark brown, the vertical tubercle light yellow, sending a pale median area caudad to the occiput; mesonotum uniformly dark brown; wings pale grey, stigma conspicuous; medial cells of wings deep; macrotrichiae rather sparse; male hypopygium with the ninth tergite flattened, the median area slightly produced; ventrad of the lateral ends of the tergite a conspicuous chitinized lobe densely set with spines; inner dististyle only feebly chitinized.

Male. — Length about 9 mm.; wing 10.3 mm.

Female. — Length 11 mm.; wing 12.5 mm.

Frontal prolongation of head testaceous, the dorso-median line dark brown, this colour including the stout nasus; palpi yellow, the terminal segment infuscated. Antennae moderately elongate, the scape yellow, the first segment darkened at the base; flagellum black, the first segment paler basally. Vertical tubercle conspicuously light yellow, the remainder of the vertex dark brown except a pale brown median area continued to the occiput, restricting the darker brown to conspicuous areas adjoining the eyes.

Pronotum brownish testaceous, dark brown medially. Mesonotum uniformly dark brown, with no distinct markings, the humeral region of the praescutum very narrowly yellow. Pleura obscure yellow, more whitish ventrally, with a conspicuous brown, dorsal, longitudinal stripe extending from the propleura to the abdomen; a conspicuous dark brown line on the sternopleurite; sternum pale. Halteres pale brown, the knobs dark brown with pale tips. Legs with the coxae obscure yellow, the cephalic face at the base slightly infuscated; femora and tibiae brownish black, the femoral bases a little paler; tarsi paler brown. Wings with a pale grey tinge; stigma conspicuous, dark brown; cell *Sc*, the cord and the veins beyond it seamed with brown; obliterative areas before and beyond the stigma, the latter including the last section of *M* and the petiole of cell M_2 . Macrotrichiae on cells 2nd R_1 plus R_2 to M_3 almost lacking, in cells R_3 and R_5 not present on the basal third of the cells. Venation: Distal section of R_2 atrophied; cells M_1 , M_2 and M_3 deep; petiole of cell M_1 a little longer than that of cell M_2 .

Abdomen obscure yellow, the base and apex of each segment broadly blackened, the yellow medial portion being narrower than the black incisures; subterminal segments largely black; hypopygium obscure yellow. Male hypopygium with the ninth tergite not arcuated, flattened, the margin distinctly projecting as a broad flattened black median lobe, the caudal margin of which is very feebly concave, the dorsal surface weakly granulose. Ventrad of the ends of the tergal plate a conspicuous cylindrical lobe, the head dilated and obliquely truncate, here set with abundant black spines, the lateral angle produced caudad. Outer dististyle broken. Inner dististyle not conspicuously chitinized as in *D. thoracica*, the dilated base pale brown, beyond which it is narrowed, curved strongly dorsad, along the lateral face of the apex a blackened chitinized blade, this being the only strongly chitinized region of the dististyle.

Habitat: South Africa (Cape Colony). *Holotype*, ♂, Oudebosch, Caledon Division, December, 1920 (*Lightfoot*). *Allotopotype* ♀

***Dolichopeza (Trichodolichopeza) picticeps*, sp. n.**

Head yellow; two large dark brown blotches on vertex, the margins of eyes broadly yellow; frontal prolongation of head yellow above, dark brown laterally; antennae of male moderately elongate, the basal flagellar segments indistinctly bicolorous, dark brown, the tips narrowly pale; mesonotal praescutum with the median stripe more or less split by a pale line; scutum, scutellum and postnotum dark, conspicuously pale medially; male hypopygium having the tergite with a dorso-medial lobe, the margin microscopically denticulate; ventrad of this a conspicuous, heavily chitinized, spinulose shelf.

Male. — Length about 8.5 mm.; wing 9.3 mm.

Female. — Length about 10 mm.; wing 10.8 mm.

Frontal prolongation of the head yellow above, the sides conspicuously dark brown; nasus comparatively slender, yellow; palpi with the first segment dark brown basally, pale at tip; second and third segments reddish, the terminal segment dark brown. Antennae of male rather elongate, if bent backward extending about to the base of the abdomen; scapal segments obscure yellow; basal flagellar segments dark brown, the first paler at base; apices of flagellar segments one to four narrowly but conspicuously pale to produce an indistinct bicolorous effect. Head yellow; a conspicuous dark brown blotch on either side of the vertex, indistinctly

connected across the median line, the inner margin of the eyes broadly and conspicuously yellow; a small brown spot on vertex adjoining the eyes immediately behind the narrowest portion of the vertex; in the male, these anterior and posterior vertical spots are more or less connected.

Mesonotal praescutum pale whitish yellow with three conspicuous dark brown stripes, the median stripe distinctly split by a reddish brown line, in the female continued almost to the posterior end of the stripe; humeral region largely occupied by a large brown area entirely separated from the three praescutal stripes in the female, confluent with the lateral stripes in the male; scutum with the median area conspicuously pale, continued caudad on to the scutellum, the lobes dark brown; scutellum and postnotum pale grey medially, the sides darkened. Pleura obscure whitish yellow, variegated with narrow dark brown longitudinal stripes, the ventral one beginning on the propleura, continued on to the sternopleurite, the dorsal stripe on the anepisternum; sternopleurite darkened except medially beneath. Halteres dark brown, the base pale, the apex of the knob indistinctly pale. Legs with the coxae yellow, darkened basally, on fore coxae occupying the entire outer face; trochanters obscure yellow; femora brown, darkening toward the tips, the extreme apex indistinctly pale; tibiae and tarsi dark brown. Wings as in the other species of the subgenus; macrotrichiae rather sparse, in cells M_2 and M_3 confined to the distal ends of the cells; in the radial cells the macrotrichiae are more numerous and continued into the bases of the cells. Venation: R_2 persistent, the distal section with about six macrotrichiae; medial cells rather deep; cell M_1 about two and one-half to three times its petiole.

Abdominal segments obscure yellow, broadly blackened basally and apically, restricting the ground-colour to narrow medial areas that are more conspicuous laterally; on the subterminal segments the ground colour is restricted to the narrow bases of the segments; hypopygium obscure yellow. Male hypopygium with the ninth tergite bearing a slight median lobe, the caudal margin of this lobe distinctly denticulate and with conspicuous setae between the denticles. Ventrad of this tergal plate on either side a very conspicuous chitinized band, each appearing \neg -shaped, the transverse arms not quite meeting across the median line, the vertical arms larger, both arms heavily set with spinules. Outer dististyle elongate, conspicuous. Inner dististyle stout at base, the surface hairy, the apex chitinized, short and stout, feebly

notched. Aedeagus short and stout with a conspicuous chitinized apophyse on either side, appearing as a shoulder.

Habitat: South Africa (Natal). *Holotype*, ♂, Inchanga, November, 1917 (Barnard). *Allotype*, ♀, Krantzkop, November, 1917 (Barnard).

This species was formerly (Ann. S. Afr. Mus., vol. 18, part 2: 211-212; 1921) determined as *D. hirtipennis* Alexander, and additional specimens of both sexes are in the collection of the South African Museum under that name.

Dolichozepeza (Trichodolichozepeza) péringueyi, sp. n.

Head yellow, including the frontal prolongation; antennae of male elongate; mesonotal praescutum with four brown stripes; wings with the medial cells very short, cell M_1 being only about twice its petiole; macrotrichiae in cells very abundant; male hypopygium with the tergal plate small, simple, the caudal margin smooth and with a U-shaped notch; a small spinulose arm ventrad of each lateral end of tergal plate.

Male. — Length about 7 mm.; wing 8.2 mm.

Frontal prolongation of head short, somewhat shiny, yellow, the nasus concolorous, short and stumpy, with a few long setae; palpi with the basal segment yellowish brown, the distal segments uniformly darkened. Antennae elongate for a member of this subgenus, if bent backward extending some distance beyond the base of the abdomen; scape yellow; flagellum uniformly dark brown, the segments elongate. Head uniformly yellow; a faint impressed median line on vertex.

Mesonotal praescutum obscure yellow with four conspicuous brown stripes, the intermediate pair only narrowly separated, contiguous behind; humeral angles whitish, immediately caudad of which is a faint brown spot; scutum obscure yellow, each lobe dark brown, the central portions of the lobes indistinctly paler; scutellum obscure yellow; postnotum obscure yellow medially, the sides of the mediotergite passing into brown. Pleura yellow, narrowly and indistinctly striped with brown, the arrangement as in the related species of the subgenus; sternopleurite dark, except medially. Halteres elongate, yellow, the knobs dark brown, the tips very indistinctly pale. Legs with the coxae and trochanters light yellow; femora testaceous brown, tipped with darker brown; tibiae and tarsi dark brown. Wings strongly tinged with brown; stigma dark brown; conspicuous oblitative areas before and beyond the stigma, the former extending caudad across M at its fork; cord narrowly seamed with dark brown; wing-apex and vein 2nd A very

narrowly margined with dark brown; veins dark brown. Macrotrichiae very abundant, extending caudad to cell Cu_1 , in cells M_1 and M_2 occupying the cells, except in their bases; cell M_3 with numerous macrotrichiae in distal half; in cells R_3 and R_5 , the macrotrichiae continue almost to the bases of the cells in their centres. Venation: Distal section of R_2 persistent, with macrotrichiae almost to margin; $R_2 + 3$ and R_3 in alignment; cell M_1 , small, only about twice its petiole; petiole of cell M_2 about one-half the cell.

Abdomen obscure yellow, the caudal margins of the individual segments narrowly infuscated, the bases of each segment less distinctly darkened. Male hypopygium small and of simple structure. Ninth tergite flattened, feebly arched, consisting of a small plate, the caudal margin smooth, with a broad and shallow U-shaped notch; ventrad of the lateral ends of this tergal plate, a short, chitinized lobe bearing comparatively few (about 15) small black spicules that are broadly interrupted on the median area. Outer dististyle unusually long and conspicuous, cylindrical, with outspreading setae; inner dististyle comparatively short and stout, chitinized, the apex subtruncate and bearing two small teeth; a conspicuous blunt lobe on lateral face of style near base.

Habitat: South Africa (Cape Colony). *Holotype*, ♂, Cape Town, May, 1920 (Péringuey).

This interesting and very distinct species is named in honour of the collector, the late Dr. Louis A. Péringuey, to whom I am vastly indebted for many favours and much kind advice.

Dolichozepeza (Trichodolichozepeza) thoracica, sp. n.

General coloration of mesonotum obscure yellow, the praescutum with three dark brown stripes, the median stripe conspicuously bifid; wings faintly tinged with brown; stigma oval, dark brown; medial cells deep; macrotrichiae rather sparse; ninth tergite very highly arched, with a ventral spinose ledge; inner dististyle heavily chitinized, the outer face with longitudinal grooves and ridges.

Male. — Length, excluding head, 6.5 mm.; wing 8.3 mm.

Head lacking in the unique type.

Mesonotal praescutum obscure yellow, with a conspicuous dark brown pattern, distributed as follows: Median stripe broad in front, soon narrowed and continued caudad almost to the suture, conspicuously split by a line of the ground-colour except at the ends, the pale median vitta approximately as wide as the narrow

brown intermediate stripes thus formed; a V-shaped brown mark at the humeral angle, completely isolated from the broad triangular lateral stripes which cross the suture and suffuse the scutal lobes; median area of scutum narrowly pale; scutellum and postnotum dark brown. Pleura yellow, narrowly but conspicuously variegated with dark brown, including a ventral stripe on the mesosternum immediately above the coxae; a more dorsal stripe on the anepisternum and a narrow dark seam on the mesepimeron immediately ventrad of the wing-root. Halteres elongate; obscure yellow, the knobs dark brown with pale apices. Legs with the coxae obscure yellow; trochanters brownish yellow; remainder of the legs broken. Wings tinged with brown; stigma, distinct, oval, dark brown; pale brown seams along the cord and the longitudinal veins beyond the cord; conspicuous obliterative areas before and beyond the stigma, the former continued caudad proximad of the cord, crossing *M* immediately before its fork. Macrotrichiae sparse, in cells *2nd R*₁ plus *R*₂ to *Cu*₁; in cells *M*₂, *M*₃ and *Cu*₁ they occur as small patches in the extreme distal ends of the cells; in cell *R*₅ the macrotrichiae are most abundant distally but continue as a thin line near the centre of the cell basad almost to *r-m*. Venation: *Sc*₂ ending opposite the origin of *Rs*, *Sc*₁ represented by a spur; distal section of *R*₂ represented by two macrotrichiae; cells rather deep, the petioles of cells *M*₁ and *M*₂ subequal.

Abdominal segments obscure yellow, the extreme apex and the extreme base of each segment narrowly dark brown; on tergite two a brown band near midlength of the segment. Male hypopygium more or less incrassated; ninth tergite narrowly margined with chitin, highly arched, viewed caudally appearing (1)-shaped, the ends of this narrow band dilated and bearing a few spicules; ventrad of this outer chitinized margin on either side a conspicuous blackened lobe that is densely spiculate, these spicules continued mesad as a narrow line, meeting on the meson. Inner dististyle conspicuously blackened, the outer surface grooved and ridged longitudinally, the appendage directed mesad and then dorsad; apex of inner style irregularly toothed. Outer dististyle of moderate length, cylindrical, provided with a few setae.

Habitat: South Africa (Cape Colony). *Holotype*, ♂, Humansdorp, Coldstream, January, 1921 (Tucker).