

LXXIV.—*New African Species of the Genus Chrysops, Meigen, in the British Museum (Natural History).* By ERNEST E. AUSTEN.

THE latest list of African representatives of this genus * includes the names of eighteen species. As stated in the "Notes" at the end of the present paper, however, two of these are synonyms. Six new species are described in the following pages, bringing the number of known African forms of these handsome and bloodthirsty flies up to twenty-two. The Museum collection contains examples of at least two additional species, of which descriptions will be published in a subsequent paper. The types (or co-types) of all the new species described below are in the British Museum (Natural History).

Genus *CHRYSOPS*, Meigen.

Chrysops funebris, sp. n.

♀.—Length † (5 specimens) 9 to $10\frac{1}{2}$ mm.; width of head $2\frac{1}{2}$ to $2\frac{3}{4}$ mm.; width of front at vertex $\frac{3}{4}$ mm.; length of wing $9\frac{1}{4}$ to 10 mm.

Uniformly black, though the usual tufts of golden pile are present below humeral calli and on mesopleuræ; dorsum of thorax (denuded) thinly covered with greyish dust; abdomen (except a dull black area on the middle of the first segment, below the scutellum) shining, clothed above with minute, sparse, whitish hairs; wing-markings uniformly dark brown or black, distal margin of transverse band straight or nearly so; first and second joints of middle and hind tarsi yellowish white, tips of these joints usually brownish.

Head.—Frontal callus large, nearly semicircular in outline, almost touching the eye on each side, and separated from the black ocellar region by a narrow band of greyish pollen; a small patch of golden pollen between bases of antennæ (perhaps produced downwards in specimens in perfect condition); face considerably produced downwards and forwards, very protuberant, separated from the shining black jowls by a strip of golden pollen running down from the front margin of the eye; under surface of head thinly clothed

* Cf. Bezzi, Bull. Soc. Ent. Ital., Anno xxxvii. 1905, p. 234.

† The length in all cases is measured from the front of the face to the tip of the abdomen, and is exclusive of the antennæ.

with rather long yellowish hair; *palpi* hazel-brown*, *very slender*; *antennæ* slender, first joint not at all incrassated and only slightly longer than the second; second and third joints dark brown, first joint lighter (brownish tawny) except at distal extremity. *Thorax* with a tuft of golden pile on the metapleuræ, besides the tufts already mentioned. *Abdomen*: the short whitish hair clothing the dorsum somewhat longer and more conspicuous on the sides of the first and second segments than elsewhere; under side of second segment also clothed with short whitish hairs; remainder of venter inconspicuously clothed with blackish hair. *Wings* with extreme base, costal cells, basal fourth of first basal and basal sixth of second basal cell, marginal cell from a point above the origin of the third vein to the end, and a continuation (apical blotch) which fills out the apical portion of the first submarginal cell, and the upper angle of the second submarginal, shading off below, dark brown; the *proximal margin* of the *transverse band* runs from the origin of the third longitudinal vein to the posterior upper angle of the fifth posterior cell, and thence (sometimes obliquely forwards) to the sixth vein, on which it ends; the *distal margin* of the transverse band runs from a point below the second longitudinal vein, and a little beyond the level of the end of the first longitudinal, to the hind margin of the wing at the end of the vein separating the third and fourth posterior cells. Proximally, the transverse band thus fills out the extreme tips of the first and second basal cells, and the end of the anal cell; distally it includes the base of the second posterior cell, and diagonally bisects the third posterior cell. The whole of the discal cell is included, but there is sometimes a tiny hyaline fleck at its extreme base. The apical portion of the wing below the apical blotch is entirely infuscated with a brownish suffusion, and the infuscated area is separated from the transverse band by a milky streak, which ends on the vein separating the second and third posterior cells. *Halteres* dark brown. *Legs*: *coxæ* dark brown; *femora* reddish brown, tips of hind pair darker; *tibiæ*, except extreme tips, front tarsi, and last two joints of middle and hind tarsi dark brown; third joints of middle and hind tarsi brownish; front and middle *tibiæ* incrassated, hind *tibiæ* also somewhat incrassated.

Uganda: type and three other specimens from north-east side of Lake Albert Edward, 1906 (*Dr. A. D. P. Hodges*);

* For names of colours see Ridgway, 'A Nomenclature of Colors for Naturalists' (Boston: Little, Brown, and Company, 1886).

a fifth specimen from the shore of Lake Victoria, in Buddu, 1903 (*Sleeping Sickness Commission of the Royal Society, per Colonel David Bruce, C.B., R.A.M.C., F.R.S.*).

Of the African species already described, *Chrysops funebris* appears, so far as may be judged from the description, most nearly to resemble *C. confluens*, Lw., from the Cape of Good Hope, from which, however, it may at once be distinguished by the slender antennæ, single frontal callus, and very different wing-markings.

Chrysops silacea, sp. n.

♀.—Length (17 specimens) 8 to 10 mm.; width of head $2\frac{2}{3}$ to 3 mm.; width of front 1 mm.; length of wing $7\frac{1}{2}$ to $9\frac{1}{3}$ mm.

Head yellow; thorax black or blackish brown, with yellow longitudinal stripes; scutellum ochre-yellow, median portion of extreme base black; abdomen ochraceous, upper side marked on basal half with two longitudinal black stripes, not reaching hind margin of third segment, and sometimes not extending beyond second; distal portion of wing from base of third vein infuscated, transverse band inconspicuous, reduced to a small dark blotch extending from base of third vein to posterior upper angle of fifth posterior cell; legs ochraceous, front tarsi and tips of middle and hind tarsi dark brown.

Head rather broad, dark brown on vertex, elsewhere clothed with ochre-yellow pollen, except on frontal callus, a mark above base of each antenna, the facial tubercles, and a small dark brown spot on the jowls below each eye; frontal callus of moderate size, three fourths as wide as the front and well separated from the eye on each side, not highly polished, edged with brown at the sides or sometimes all round the upper curved margin; facial tubercles highly polished, elliptical in shape, occupying lower two thirds of face and extending nearly to margin of buccal cavity, separated from each other by a narrow stripe of yellow pollen; often only the upper portion of the pollinose stripe is present, when the tubercles coalesce below and assume the appearance of a single elongate cordate tubercle, which extends to the lower margin of the face; front, except on callus, clothed with short brown hair, densest on vertex; sides of face and lower surface of head clothed with pale golden hair; *palpi* lanceolate, widest part of moderate breadth, thinly clothed with minute yellowish hairs; *antennæ* $3\frac{1}{4}$ mm. in length, dark brown, basal portion of slender first joint tawny ochraceous. *Thorax* clothed with

golden-yellow pile, which is thicker and longer on the sides ; the dorsum exhibits three well-defined blackish-brown stripes, the median stripe being separated from the others by a pair of dull ochraceous stripes, which meet together in front and taper off posteriorly, where each is continuous with a broad, lateral, light yellow stripe ; the median blackish-brown stripe tapers off in front and extends to the hind margin ; the adlateral blackish-brown stripes, which are broader behind the transverse suture, are rounded off in front and behind and do not reach the hind margin ; pleuræ marked with a broad, curving, yellow pollinose stripe, thickly clothed with golden-yellow pile, commencing below the humeral callosity, encircling the upper part of the mesopleura, and extending to the metapleura ; sternopleuræ yellowish pollinose, golden yellow behind, where they are clothed with similarly coloured hair ; area between front coxæ also clothed with golden-yellow pollen and hair. *Abdomen* clothed above and below with minute orange-ochraceous hairs ; the black stripes, which commence on hinder half of first segment, vary greatly in width in different specimens, and are often somewhat irregular in outline ; they are sometimes interrupted on hind margin of first segment, and may terminate before reaching hind margin of second, to reappear as basal spots on the third segment ; lateral margin of second, and sometimes of third and fourth segments as well, narrowly edged with dark brown or black ; venter unicolorous, a small median black streak occasionally present on the second and third segments. *Wings* : costal cells ochre-yellow ; stigma ochraceous ; whole of apical portion, from a point on costa above fork of third vein to tip of anal cell, suffused with brown, including the whole of the fifth posterior cell, but not the bases of the second, third, and fourth posterior cells ; there is thus a paler, buff-coloured area between the apical blotch and the remains of the transverse band ; the latter includes the tips of the first and second basal cells and the basal third of the discal cell ; lower portion of second basal cell usually with a slight yellowish tinge. *Halteres* dark brown. *Legs* : coxæ dark brown (front pair paler), clothed with golden-yellow hair ; femora and tibiæ clothed with minute orange-ochraceous hairs ; front tibiæ somewhat incrassated, their distal portion brownish.

Congo Free State ; Southern and Northern Nigeria. Type and four other specimens from the Congo Free State (Kimwenzu, 28. iii. 1904 ; Yakusu, 15. ix. 1904 ; Kimwosa,

Leopoldville, 1904; N'Kussu, Cataract Region, 25. xi. 1904: Drs. Dutton, Todd, & Christy); other specimens from Old Calabar, Southern Nigeria (the late Miss M. H. Kingsley); Ohumbele, Southern Nigeria, 6. viii. 1900 (Dr. H. E. Annett); Odut and Uwet, May 1906 (G. C. Dudgeon); Sapele, Northern Nigeria, 1906 (received from Dr. G. F. Darker); Akwatcha, Bassa Province, Northern Nigeria, July 1906, January and February 1907 (Dr. G. J. Pirie). According to Dr. Pirie *C. silacea* is numerous at Akwatcha in the dry season; and at Sapele, in Northern Nigeria, it is stated by Dr. Darker to be troublesome to human beings.

This species must not be confused with *Chrysops dimidiata*, v. d. Wulp, the wing-markings of which are identical with those of *C. silacea*, while the buff-yellow abdomen is also adorned with two black longitudinal stripes. *C. dimidiata* may be distinguished by the considerably larger and more prominent frontal tubercle, which is only narrowly separated from the eye on each side; by the paler (buff-yellow) ground-colour of the abdomen; and by the fact that the abdominal stripes are much broader and reach the fourth segment, when they either become merged in the dark brown colour of the terminal segments, as stated by van der Wulp, or meet together on the sixth segment so as to form a loop. In *C. silacea* the black stripes are sometimes so attenuated or interrupted as to be easily overlooked, and in the case of one specimen from Odut, Southern Nigeria, little more of them remains than a couple of small dark flecks on the hind margin of the first segment, and one or two indistinct markings on the second.

The range of *C. dimidiata*, which was described ('Notes from the Leyden Museum,' vii. 1885, p. 80) from Chimfimo, Portuguese West Africa, evidently overlaps that of *C. silacea*, since the Museum possesses a series of specimens of the former species from Ologbo, Southern Nigeria, May 1906 (G. C. Dudgeon).

Eye-markings *.—In two specimens from Sapele, preserved in spirit, the occipital border is fairly broad, and in contact with the occipital margin and with the upper frontal spot, which is also connected with the frontal margin. The occipital border is also in contact with the shaft above and the arrow-head below, which are continuous with each other,

* For explanation of terms used see V. A. E. Daecke's interesting paper, "On the Eye-Coloration of the Genus *Chrysops*" ('Entomological News,' vol. xvii. 1906, pp. 39-42, pl. i.).

forming a zigzag line. The middle and lower frontal spots are somewhat narrow and in contact with the frontal margin*.

Chrysops Wellmanii, sp. n.

♀.—Length (5 specimens) 7 to $7\frac{2}{3}$ mm.; width of head $2\frac{1}{3}$ to $2\frac{1}{2}$ mm.; width of front at vertex 1 mm.; length of wing 7 to $7\frac{1}{3}$ mm.

Head wide, flattened from front to rear; face whitish grey; frontal callus, vertex on each side, and antennæ shining black; first joint of antennæ elliptical in outline when seen from above, strongly incrassate, twice the length of the second joint and, at the widest part, one and a half times as broad; thorax uniformly plumbeous above and below, without markings; abdomen varying from ochraceous-buff to tawny, brownish at the tip; wings hyaline, extreme base, costal border, and sharply defined transverse band, tapering to hind margin, blackish brown; legs, except cinereous coxæ, black.

Head.—Frontal callus shallow from above downwards, but very wide, extending from eye to eye; lower margin straight, sharply defined, separated from the bases of the antennæ by a narrow transverse band of the whitish-grey pollen which covers the face; frontal callus somewhat triangular in outline, the upper margin being produced in the centre so as to include the anterior ocellus; above the callus is a narrow band of grey pollen, in the middle line sending an offshoot to the occiput, and leaving on each side of the vertex a somewhat quadrate, shining, black area; occipital region grey; face and jowls entirely whitish-grey pollinose, without any shining tubercles, but oral margin blackish in front; face and underside of head clothed with long whitish hair; *palpi* cinereous, elliptical in outline, clothed with whitish hair; first joint of antennæ clothed with blackish hair (third joint wanting). *Thorax* clothed with long whitish hair on sides and beneath. Post-alar calli with a reddish tinge. *Scutellum* blackish, hind margin fringed with whitish hair. *Abdomen*: a somewhat quadrate dark brown patch on the middle of the first segment beneath the scutellum, shading off to the hind margin; extreme lateral margins of

* *Chrysops silacea* is the species referred to by Newstead ('Annals of Tropical Medicine and Parasitology, vol. i. no. 1 (February, 1907), p. 43, pl. iv. fig. 1) as "*Chrysops dimidiatus*, v. d. Wulp." I am responsible for this identification, which I formerly believed to be correct, and it was not until a series of the true *C. dimidiata*, v. d. Wulp, was received from Mr. Dudgeon, as mentioned above, that the error became evident.

second and lateral margins of third and following segments dark brown; on ventral side fifth and following segments usually dark brown, hinder portion of fourth segment often more or less brownish; abdomen clothed above with short yellowish or whitish hair, beneath with short whitish hair, sides fringed with long whitish hair. *Wings*: bases as well as extreme tips of first and second basal cells blackish brown; apical blotch narrow, extending from the upper end of the distal margin of the transverse band to a little way beyond the termination of the upper branch of the third longitudinal vein; distal margin of transverse band somewhat irregular, commencing on the costa a little beyond the level of the fork of the third vein, and terminating at the tip of the anal cell; in the fourth and fifth posterior cells it is somewhat indistinct, and less sharply defined than above; proximal margin of the transverse band commencing at the base of the third and running at right angles to the costa almost straight down to the sixth vein, sometimes with a slight backward projection at the upper inner angle of the fifth posterior cell; veins in hyaline area on basal side of transverse band pale (cream-colour); veins beyond transverse band also partly pale. *Halteres* brown. *Legs*: front tibiae alone incrassated, indistinctly reddish at the base.

Angola: type and four other specimens from the Chiyaka district, March 1906 (*Dr. F. Creighton Wellman*).

The species was met with in thick bush, where antelope abound, and Dr. Wellman states that it "is very agile and goes for one's eyes." When forwarding these specimens and examples of a new species of *Tabanus*, which will shortly be described, the donor wrote:—"These are probably the first insects ever collected in Chiyaka district." I am glad to be able to associate with this extremely pretty species the name of its discoverer, who, although professionally engaged in another department of science, owing to his energy and enthusiasm as a collector of Diptera has, during the last three years, enriched the National Collection with examples of many interesting new species from Portuguese West Africa.

By its remarkable coloration *C. Wellmanii* is easily distinguishable from any of its congeners known to me from any part of the world.

Chrysops Brucei, sp. n.

♀.—Length (8 specimens) 8 to $9\frac{2}{3}$ mm.; width of head $2\frac{1}{2}$ to 3 mm.; width of front at vertex $\frac{3}{4}$ mm.; length of wing $7\frac{1}{2}$ to 9 mm.

Thick-set, medium-sized, dusky species; dorsum of thorax dark brown, with grey longitudinal stripes; abdomen smoke-grey or drab-grey, with blackish markings on upper side; wings with a brownish tinge, and extreme base, costal border, an oblique transverse band tapering to a point and not reaching hind margin, and an apical blotch, intensified round ends of second longitudinal and upper branch of third longitudinal veins, dark brown or blackish brown; legs ochraceous, extreme tips of all femora and ends of tarsi dark brown.

Head yellowish pollinose, front of same colour or greyer; ocellar region usually dark brown, greyer in better-preserved examples; *frontal callus* dull black, small, separated from eye on each side by about one sixth of total width of front at that point, transverse diameter of callus about two and a quarter times its height, upper border slightly concave in middle; a transverse furrow beneath antennæ, below which the central portion of the face is somewhat protuberant; on each side of this protuberance a shining brown triangular area descending to margin of buccal cavity; a small blackish triangular fleck on the jowls beneath each eye (not always distinctly visible); front, sides of face, and under side of head clothed with fine yellowish hair, longer beneath; *palpi* of moderate size, brownish or reddish brown, thinly clothed with fine yellowish hair; *antennæ* small, first joint slightly swollen, not elongate, length of second joint about three fourths of that of first; first and second joints blackish grey above, dull tawny below; third joint blackish brown, dull ferruginous at extreme base; first and second joints clothed with blackish hair. *Thorax*: dorsum with three dark brown and four much narrower grey longitudinal stripes, also an extremely narrow, short, dark stripe above base of wing, running from lower end of transverse suture almost to postalar callus; median dark brown stripe about twice the width of the other two, rounded off about midway between transverse suture and posterior margin, and thence to hind margin in well-preserved specimens somewhat less distinct; paired dark brown stripes interrupted at transverse suture, and not extending so far forwards as median stripe; admedian grey stripes usually with a somewhat yellowish or brownish tinge posteriorly, lateral grey stripes paler, lavender-grey behind transverse suture; pleuræ mouse-grey, clothed with yellowish or pale golden hair, of which there is a tuft below humeral callus, on hind margin of mesopleura, and on metapleura. *Scutellum* greyish brown at base, with broad dull ferruginous hind border. *Abdomen*: first segment with a black median blotch beneath

the scutellum extending to the hind margin, and on each side curving outwards so as to form a black hind border to the segment reaching to the lateral margins; a small yellowish-grey triangle on the posterior margin, in the middle line, partially divides the blotch into two halves; second and third segments with a pair of large black or blackish-brown blotches, roughly quadrate in shape, with the posterior inner angles rounded off, and the outer border (at least in the case of the blotches on the second segment) emarginate; on the second segment the emarginate outer borders of the blotches run out to the basal angles, thus forming, with the corresponding markings on the first segment, an incomplete transverse band; in the case of the second segment the hinder edge of the blotches is close to the hind margin, in that of the third the drab-grey or buff-coloured hind border is usually a little deeper; fourth segment with a similar pair of blackish blotches (most distinct when the insect is viewed obliquely from behind), more or less rounded off posteriorly, but not emarginate on the outer side; fifth, sixth, and seventh segments dark brown, hind borders of fifth and sixth drab-grey, buff, or ochraceous-buff; upper surface of abdomen, especially posteriorly, clothed with minute golden hairs, lateral margins of fifth and following segments fringed with longer brownish hair; blotches on third segment covered with minute black hairs; venter mouse-grey, clothed with fine golden hair, longer than on dorsum and more erect; hind borders of segments yellowish. *Wings*: brown area at base including basal fourth to basal sixth of first and second basal cells, the tips of which are included in the transverse band; second costal cell lighter towards the tip; stigma large and well-marked, dark brown; distal margin of transverse band beginning on costal border halfway or two thirds of the distance between end of stigma and level of fork of third vein, and then running obliquely backwards with two prominences, one on third vein before it bifurcates, the other in base of second posterior cell; transverse band terminates in anal cell and does not reach sixth longitudinal vein; discal cell entirely included in transverse band, but its central portion as well as base of first submarginal cell usually lighter; in the apical blotch the *intensifications of colour round the ends of the second longitudinal vein and upper branch of the third* very conspicuous and characteristic; against a dark background the distal border of the transverse band is seen to have a lighter edging. *Halteres* dark brown. *Legs*: coxæ mouse-grey; last three joints of all tarsi dark brown;

extreme tips of first and second joints of middle and hind tarsi brown; front tibiæ moderately incrassated, middle and hind tibiæ not incrassated.

Uganda: type and two other specimens from Kyadondo, 1903 (*Colonel David Bruce, C.B., R.A.M.C., F.R.S.*); other specimens from Singo, 1903 (*Col. Bruce*), Busoga, March 1906 (*Dr. A. D. P. Hodges*), and the Nile between Wadelai and Nimule, 1906 (*the late Dr. W. A. Densham*). With reference to the specimen obtained by him, Dr. Densham wrote:—"Only specimen seen; taken at an opening in the swampy river edge." I have pleasure in naming this species in honour of the distinguished investigator, whose epoch-making discovery of the cause of nagana (tsetse-fly disease of animals) laid the foundation of all subsequent work upon the ætiology and treatment of sleeping sickness and the various forms of animal trypanosomiasis.

Chrysops Brucei is not closely allied to any other African representative of its genus hitherto described. In its abdominal markings it presents a certain, though not by any means a close, resemblance to the following species; but the wing-markings (flecks at tips of second and upper branch of third vein) are alone sufficient to distinguish it from all other African species of *Chrysops* at present known.

Chrysops inconspicua, sp. n.

♀.—Length (3 specimens) 5 to $7\frac{1}{2}$ mm.; width of head 2 to $2\frac{1}{2}$ mm.; width of front at vertex $\frac{4}{5}$ mm.; length of wing 5 to $6\frac{1}{2}$ mm.

Small species, with rather broadly oval abdomen, the dorsum of which is marked with conspicuous paired black spots or transverse blotches, meeting in the middle line in front and separated by triangular interspaces; wings hyaline, with base, costal border to end of second longitudinal vein, and an oblique transverse band not extending beyond anal cell blackish brown; anal cell infuscated, a clear space in first and second basal cells near their distal extremities; legs entirely black.

Head.—Front olive-grey, jowls and sides of face chrome-yellow pollinose; frontal callus very large, shining black, shaped like an equilateral triangle, the apex including the anterior ocellus; vertex with a pair of small, transversely elongate, shining black flecks, one on each side of median line and including one of the other two ocelli; median portion of lower part of face with a single large, somewhat cordate, shining black tubercle, extending to margin of buccal cavity; no black fleck on jowls; front, sides of face, and

under surface of head thinly clothed with rather long and fine yellowish hair, longer below; *palpi* blackish, slender or of medium thickness, clothed with minute yellowish hairs; *antennæ* not elongated, first joint more or less incrassated, second joint two thirds of length of first; first and second joints dark mouse-grey, somewhat shining, clothed with rough-looking yellowish-brown hair; last joint dull brownish black. *Thorax*: dorsum with a pair of well-defined, broad, shining, blackish-brown longitudinal stripes, rounded off at each end, but not interrupted on transverse suture; these stripes separated by a broad median mouse-grey stripe, darker from front margin to a little beyond transverse suture, the darker portion with a light grey edging; *pleuræ* yellowish pollinose (lower portion of mesopleura blackish), with thick tufts of cadmium-yellow hair; dorsum clothed with fine, erect, pale yellow hair; *scutellum* dark mouse-grey, clothed with long, thin, yellowish hair. *Abdomen*: ground-colour of dorsum olive-grey, sides of first and second segments sometimes ochraceous; first segment with a blackish-brown median blotch, extending well beyond scutellum on each side; paired blotches on the four following segments roughly triangular in shape, rounded off behind, and not extending to hind margins, but sometimes transversely elongate, being produced so as to include basal angles of segments; sixth and seventh segments mouse-grey; dorsum (except on black blotches, which are covered with minute, appressed, blackish hairs) clothed with short chrome-yellow hair, most noticeable on hind margins of segments; sides of segments, from first to fifth inclusive, fringed with bright cadmium-yellow hair; venter yellowish grey, clothed with cadmium-yellow hair, basal portion of some of the segments sometimes with dark brown transverse bands. *Wings*: basal brown area in first basal cell includes the proximal two thirds; in second basal cell it may be confined to proximal third, or, if extending as far as in first basal cell, may be more or less obliterated posteriorly; proximal margin of transverse band running perfectly straight from base of third vein to inner basal angle of fifth posterior cell, thus filling out the tips of the first and second basal cells with colour; distal margin of transverse band commencing at end of second longitudinal vein and running obliquely backwards so as to include basal half of fifth posterior cell; distal margin of transverse band with three indentations, the first in first submarginal cell, above fork of third vein, the second in first posterior cell, and the third on or near vein separating fourth and fifth posterior cells; the transverse band dies away in the anal cell; trans-

verse band sometimes with lighter areas, *e. g.* in discal cell and at base of fourth and fifth posterior cells; portion of fifth vein bounding second basal cell below more or less suffused with brown; *no apical blotch*. Halteres dark brown. *Legs*: none of the tibiae incrassated.

Angola (Ochilonda, Bihé): three specimens, March 7th–9th, 1905 (Dr. F. Creighton Wellmann). The donor's field-note on this species is as follows:—"Taken March 7th, 8th, and 9th in the edges of bush bordering on small wet plains. Natives call it the 'antelope fly,' and state that it bites principally the duyker-bok (*Cephalophus Grimmii*)."

The slight resemblance between this species and the foregoing as regards abdominal markings has already been noted; the wing-markings, however, at once distinguish it, and it cannot possibly be confused with any other African *Chrysops* as yet described. Since neither of the three specimens available is in faultless condition, no special *type* has been selected; but the foregoing description has been drawn up from all three, which are therefore *co-types*.

Chrysops nigriflava, sp. n.

♀.—Length (3 specimens) $7\frac{1}{2}$ to $8\frac{3}{4}$ mm.; width of head $2\frac{2}{3}$ to $2\frac{4}{5}$ mm.; width of front at vertex $\frac{5}{6}$ mm.; length of wing 8 to $8\frac{1}{3}$ mm.

Cadmium-yellow, with conspicuous black longitudinal stripes; dorsum of thorax with three black stripes, middle one extending on to scutellum; dorsum of abdomen with two very broad black stripes, enclosing a narrower median stripe of ground-colour; base, costal border, and distal half of wings, from base of third vein, blackish brown, an ill-defined lighter area along posterior margin, commencing below upper branch of third vein and terminating in fifth posterior cell; anal cell (in all three specimens available) closed before reaching margin of wing; legs black.

Head cadmium-yellow pollinose; frontal callus shining black, rather narrow in the antero-posterior direction, and on each side ending on a level with outer margin of base of antenna, upper edge somewhat curved, ends rounded off, lower edge straighter; *vertex* marked with a dark brown nearly circular spot, which includes the ocelli; median tumid area of lower part of face with shining dark brown triangle on each side, apices of triangle reaching margin of buccal cavity; no dark spot on jowls; sides of face, jowls, and under side of head clothed with cadmium-yellow hair; *palpi* large, lanceolate in shape when viewed from outer side,

blackish brown and clothed with brownish hair; *antennæ* (third joint missing) black, not slender, first joint slightly incrassate and also somewhat elongate, length of second joint two thirds of that of first joint; hair clothing first and second joints black. *Thorax*: black stripes on dorsum at least twice as broad as the pair of yellow stripes separating them, which are somewhat paler than elsewhere; a dark brown stripe on side of thorax on a level with base of wing, extending from front margin to postalar callus; beneath this stripe in well-preserved specimens there is a thick fringe of cadmium-yellow hair, and the lateral yellow stripe external to the outer dorsal black stripe bears similar hair; lower part of mesopleura and pectus blackish brown. *Scutellum* yellow on sides and posteriorly; end of median thoracic stripe forming a dark shield-shaped median spot, not extending to hind margin; *yellow area on scutellum and admedian yellow thoracic stripes apparently pollinose, the ground-colour being black.* *Abdomen*: black dorsal stripes starting from a common base on front margin of first segment beneath scutellum, dividing just before reaching hind margin of this segment, and extending without interruption to the seventh segment; they approach one another on the sixth segment and almost or quite come into contact on the seventh; on the third and following segments the stripes widen out so as to reach the lateral margins; venter, except a scarcely visible black or blackish median area at extreme base on first segment, entirely cadmium-yellow without markings, clothed with short, appressed, similarly coloured hair; median dorsal stripe and sides of first and second segments clothed with similar hair. *Wings*: transverse band extending to hind margin (though lighter posteriorly), and so broad that wing may be described as blackish brown with exception of a large, semihyaline, triangular area at the base; the upper margin of this light area, which is somewhat blurred, starts at the base of the anal cell and runs obliquely forward into the marginal cell a little before the base of the third longitudinal vein; the anterior side of the light area is formed by the proximal margin of the transverse band, which runs at right angles to the costa, from the base of the third vein straight down into the anal cell; the alula, axillary cell, and apical portion of anal cell are all infuscated; lighter area in distal half of wing widest in first submarginal cell (*i. e.* below what in the case of other species would be the apical blotch), and thence progressively diminishing in width. *Halteres* dark brown. *Legs* entirely black and clothed with short black hair, none of the tibiæ incrassated.

German East Africa: type and two other specimens from Nguelo, Usambara (*purchased from Hermann Rolle*).

The striking markings and coloration of this species are sufficient to distinguish it without difficulty from any other African *Chrysops* at present known.

SYNONYMICAL AND OTHER NOTES.

Chrysops tarsalis, Walk., = *C. longicornis*, Macq., as suggested by Gerstaecker (Baron Carl Claus von der Decken's 'Reisen in Ost-Afrika,' Bd. ii. Abth. 3, 1873, p. 384). Miss Ricardo (Ann. & Mag. Nat. Hist. ser. 7, vol. ix. 1902, p. 368) is mistaken in regarding the two species as distinct.

Chrysops trimaculatus, Bigot, = *C. longicornis*, Macq. Through the courtesy of Mr. G. H. Verrall, in whose collection it now is, I have been enabled to examine Bigot's type, which is a ♂, not a ♀, as stated by the author and by Miss Ricardo (*loc. cit.* p. 371).

Chrysops fuscus, Ricardo (*loc. cit.* p. 368).—The type and remainder of the original series of this species are males, not females, as stated by the author.

LXXV.—*Descriptions of Two new Species of Plecotus.*

By G. E. H. BARRETT-HAMILTON.

AMONGST the bats in the British Museum of Natural History I find two undescribed species of the "Long-ear." They may be characterized as follows:—

Plecotus teneriffæ, sp. n.

This bat resembles *P. auritus* of Britain, but has much larger wings. The colour is apparently darker, but cannot be taken as reliable from the old dried skin upon which this description is based: it is, above, near Ridgway's "hair-brown," the hair-tips lighter; below, dirty yellowish white, the dark basal portions of the hairs not evident.

The type has no skull.

The dimensions (in millimetres) of the type are as follows:—

Head and body 52; tail 45; ear from the notch 35; tragus 14; thumb without claw 6; longest digit 73; basal joint of fifth digit 35; basal joint of second digit 37; forearm 44; tibia 18.5; hind foot (without claw) 8.

Hab. Teneriffe.



Austen, E. E. 1907. "LXXIV.—New African species of the genus *Chrysops* Meigen, in the British Museum (Natural History)." *The Annals and magazine of natural history; zoology, botany, and geology* 20, 507–520.

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