much paler; ventral area dull greyish-yellow with some pale greyish blotches on segments five to seven; spiracles dullish-yellow; hooks of anal appendage reddish-brown. On two of the four pupæ I had the mandibles were conspicuously black and shining.

On April 16th, 1907, the eyes turned pink and wing cases darkened a little. On April 17th, eyes became dark purplish-grey, and wing cases darker and of a brownish hue. On April 18th, the bodies went dark, and the whole pupa became dusky purplish-grey. On April 21st, three imagines emerged between 12.30 and 1.15 p.m. I first noticed one male fully emerged and drying his wings, which were not quite fully developed. About fifteen minutes later I saw another partly emerged and watched its completion; this proved to be a male also. At 1.15 p.m. my last pupa, which I had been constantly watching with a powerful lens for about half-an-hour, I saw burst first the dorsal line down second thoracic plate; then transversely the division between first and second thoracic plates, and finally the complete emergence. This proved to be a female. One pupa died, the first I had obtained on March 20th. It will therefore be seen that the dates of pupation of the three others were March 23rd (two) and March 24th (one), but they all emerged on the same date, namely, April 21st, 1907, between 12.30 and 1.15 p.m. I therefore have had the gratification of rearing, and recording the complete metamorphosis of, this very local insect.

Lamorna, Truro, Cornwall: March, 1908.

NOTES ON SOME TRANSVAAL MOSQUITOES, INCLUDING TWO NEW SPECIES AND A NEW VARIETY.

By Fred. V. Theobald, M.A.

A large consignment of mosquitoes from the Transvaal, collected by the late Government entomologist, Mr. Simpson, whose untimely death has been so felt and regretted by all in South Africa, has been recently examined, and has proved of considerable interest. Firstly, because two new species were found in it which are described here; secondly, because the rare *Etiorleptiomyia mediolineata*, Theob., described from a single specimen from the Sudan, occurs in it; and, thirdly, the enormous variation in size shown in some of the common Vaal species. Three particularly need notice in connection with the latter, namely, *Culex tigripes*, Grandpré, *C. simpsoni*, Theob., and *C. dissimilis*, Theob. The first vary in size from 6·8 to 5 mm., the second from 8 to 4 mm., the latter from 5·5 to 4 mm. The last-named insect is of particular interest, for, as far as I can see

after examining the numerous specimens, the smallest and the narrow pale-banded proboscis forms are my *C. dissimilis*; the large, broad, pale-banded proboscis forms are my *C. hirsutipalpis*. I cannot detect any differences except in size and general appearance, but in the large Transvaal series every gradation from one to the other could be found. I therefore propose to sink *C. hirsutipalpis* as a large variety of *C. dissimilis*. The same is seen in the *Pyretophorus costalis*; some specimens measure 5 mm., one only 3·4 mm., and in the smaller forms the leg markings are less conspicuous.

This collection of some hundreds of specimens is poor in Anophelines, which seem to be only abundant in certain areas of the Transvaal and not uniformly spread over it as in some warm countries.

Besides *P. costalis* the following also occur:—*Cellia squamosa*, Theob., *Pyretophorus cinereus*, Theob., *Myzorhynchus mauritianus*, Grandpré, and *Myzomyia funesta*, Giles.

The large *Theobaldia spathipalpis* of Rondani also occurs in the collection, so we now have it known in Africa at the Cape, Transvaal, Sudan, Egypt, and Algeria, as well as in Southern Europe, the Mediterranean Islands, Canaries, and the Azores.

Banksiella luteolateralis, Theobald, var. *circumluteola*, nov. var.

Head like the type, also proboscis and antennæ; palpi of female all black. Thorax with creamy lateral areas, which unite in front, forming a continuous mass behind the head, the dark median area having only bronzy-brown scales, and being narrowed in front.

The wings have more brown-scaled areas than the type, the only creamy-scaled veins being the basal half of the first long vein and the fifth, except its upper branch; there are also pale lateral scales on the apical half of the subcostal, and a few indistinct ones on the basal part of the second and fourth veins. The stem of the first fork-cell is half the length of the cell, and that of the second about two-thirds the length of the cell. Abdomen as in type, also legs. Length 5 mm.

Habitat. Transvaal (Mr. Simpson).

Observations.—Differs from the type and other varieties in the pale lateral thoracic area extending around the front of the thorax, and by the less pale scaled areas on the wings.

Etiorleptiomyia mediolineata, Theob.
(1st Rept. Wellcome Res. Labs. p. 71) (1904).

The single specimen (a female) in the collection shows some slight variations from the type.

The palpi are white-tipped instead of being all black. The thorax is more ornate, having an area of bronzy scales on each side in front and behind, and a small area on each side between them, these areas separated by the golden scales. The scutellum has some

creamy flat scales with the black ones, which latter only occurred in the type.

The pleuræ have some flat white scales which could not be seen in the type, owing to its being somewhat damaged.

All other characters agree with the specimen from the Pibor.

Ficalbia inornata, nov. sp.

Thorax and abdomen uniform deep brown; proboscis moderately long, deep brown; pleuræ pale brown. Legs uniform brown. The whole insect with bronzy reflections in bright light.

♀. Head brown, with dull flat scales and paler upright forked scales; clypeus pale; proboscis uniform in colour, brown in some lights, violet in others, swollen apically where it is testaceous; antennæ brown; basal segment pale.

Thorax deep brown, with traces of a paler line in the middle and in front at the edges, clothed with scanty narrow-curved bronzy scales and long black backwardly-projecting chætæ, especially posteriorly and over the roots of the wings; pleuræ pale brown with some grey reflections; scutellum with small flat brown scales showing violet reflections, forming a large mass on the mid lobe, small areas on the lateral lobes, mid lobe with two long median border-bristles, then two shorter ones and a few still smaller; metanotum nude, deep brown. Abdomen brown, unbanded, with metallic violet and traces of green reflections; pale ventrally.

Legs uniform brown, with bronzy and violet metallic reflections, paler basally; ungues small, equal and simple; wings with typical brown Ficalbian scales, a somewhat dense patch of them above the cross-veins; outer costal border spinose and dark; subcostal vein-scales dark, also the single-rowed median vein-scales, lateral ones pale; fork-cells of nearly equal length, the first submarginal slightly the narrower, its base slightly nearer the apex of the wing, its stem not quite twice the length of the cell; stem of the second posterior cell about one and a third the length of the cell; posterior cross-vein wider than the mid, a little more than its own length distant from it; halteres with pale stem and fuscous knob. Length 3 mm.

♂. Head with flat, rather loose violet-brown scales, some showing an ochreous tinge; upright forked-scales dark, showing ochreous reflections in some lights, especially behind; apparently a single large curved median black chæta projecting forwards between the eyes; antennæ plumose, dark brown, basal segment pale; palpi very short; proboscis dark.

Thorax as in female, but two median bare lines, very distinct. Abdomen as in female, but with traces of indistinct pale basal lateral spots on the three more basal segments. Fore and mid ungues unequal and simple; hind equal and simple.

Wings very similar to the female, but the fork-cells relatively shorter. Length 3 mm.

Habitat. Transvaal (Mr. Simpson).

Observations.—Described from a perfect female and two males.

This is the first female recorded, the three previously known

species all being founded on males. The only other African member of this genus known is *F. nigripes*, Theobald, from Sierra Leone (Mono. Culicid. vol. iv. p. 578, 1906), which differs from the Transvaal species in having a banded abdomen, the basal white bands being very prominent in the Sierra Leone insect. The female wing-scales agree with those of the male in this genus, and the discovery of the female does not necessitate adding anything to the definition of the genus.

Ædes inconspicuosus, nov. sp.

Head dull ochreous-brown, paler than the brown thorax; abdomen, legs, and proboscis, all dark brown.

♀. Head deep brown, with small, rather loose, flat scales over most of the area, some dull ochreous, others brown, and others with a dull violet tinge, the ochreous hue prevailing, behind a large patch of narrow-curved ochreous scales, thin ochreous upright forked-scales behind, brown in front; chætæ long, deep brown; palpi rather small, proboscis and clypeus deep brown; antennæ deep brown. Thorax deep brown, with narrow-curved pale brown scales, showing some ochreous reflections; chætæ deep brown; scutellum pale brown, with narrow-curved pale scales and five deep brown border-bristles; metanotum deep shining brown; pleuræ grey.

Abdomen deep brown, with dull violet reflections; on the venter the segments are pale at their bases; border-bristles pale brown.

Legs deep brown, unbanded; the tarsi showing dull ochreous hues; ungues small, equal, much curved and simple.

Wings with long thin brown lateral vein-scales; fork-cells long, the first submarginal cell much longer but only slightly narrower than the second posterior cell, its base considerably nearer the base of the wing than that of the latter, its stem about one-fourth the length of the cell; stem of the second posterior nearly as long as the cell; posterior cross-vein nearly three times its own length distant from the mid. Length 3 mm.

♂. Antennæ plumose, plume-hairs brown, internodes grey; palpi very small, brown. Head, thorax, and abdomen as in the female, but the abdominal segments are deeply constricted at the base and the scales at the apical edges show dull ochreous reflections (not banding). Wings much as in the female, but the stem of the first submarginal cell only one-third the length of the cell, and the posterior cross-vein only about one and a-half times its own length distant from the mid. Ungues of fore and mid legs unequal, uniserrate; hind small, equal, and simple. Length 3 mm.

Habitat. Transvaal (Mr. Simpson).

Observations.—Described from a single female and male. A small, brown, inconspicuous mosquito, the only species of this genus as yet recorded from Africa.