

A NEW EAST AFRICAN *TRICHOLOPEURUS*.*

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The Mallophaga or biting-lice are obligatory external parasites of mammals and birds, and the family Trichodectidae, to which *Tricholipeurus* belongs, is found exclusively on certain groups of the mammals, including (in East Africa) the Carnivora or flesh-eaters, the Ungulata or hoofed animals, the Hyracoidea or hyraxes (known to South Africans as dassies), and certain Primates (lemurs and monkeys).

Among the Ungulata the pig-family are apparently never infested with Trichodectidae, but with this exception almost every member of the Carnivora, Ungulata and Hyracoidea may be expected to be infested with a species peculiar to itself, and a hyrax may have a number of such species. Only when the host-species are very closely related, as in the case of the two species of water-buck, is it to be expected that their Trichodectidae will be indistinguishable from each other, and among the hyraxes even barely distinguishable sub-species of the host may have mallophagan parasites which are specifically distinct.

Although these parasites are of great interest (particularly because they often throw new light on the relationships and ancestry of their hosts), and are very easy to collect, our knowledge of them is very incomplete, and it is perhaps worth indicating how great our ignorance is by giving a few examples of very common animals of which the parasites are unknown. We do not know the parasites of any of the East African cats, from lion down to jungle-cat, nor of either species of hyaena, nor of any of the dog-group; those of the mongooses and genets are better known, but there are many gaps even here. Among the hoofed animals the parasite of the common zebra is very imperfectly known and (as the specimens were collected from a zebra in a zoo) we may not even have the right parasite at all; the Trichodectidae of buffalo, bush-buck, Grant's gazelle, Coke's hartebeest (kongoni), oribi, oryx and topi are all unknown. From East African hyraxes we know less than half of the species which must occur; from lemurs we have no records whatever,

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and the sole record from a monkey (a colobus) is doubtful. Even among the domestic mammals much remains to be learnt: we do not know if the parasite of the donkey is the same as that of the horse, and the camel ought to have a species of exceptional interest, but it has never been collected. This list is merely given to indicate how easy it would be to add to our knowledge, and the omission of any animal in no way implies that we know its Trichodectidae. If any reader would like to assist in increasing our knowledge I would be delighted to supply all necessary information.

In view of the extent of our ignorance it is a great pleasure to be able to fill one of the gaps by describing the mallophagan parasite of the familiar "Tommy" (one of the commonest species of buck in Kenya), and I am much indebted to Mr. J. L. Hewlett-Parker for giving me the opportunity to examine the dried skins from which the new species was obtained. I am also greatly indebted to Mrs. G. J. Edney for the beautiful drawings from which the figures were prepared.

Tricholipeurus parkeri sp.nov.

Probably most closely related to *Tricholipeurus cornutus* (Gervais) and *T. longiceps* (Rudow), the former described from *Gazella dorcas* and the latter from *G. arabica*. *T. cornutus* has not been satisfactorily described, though Taschenberg (1882, p. 220, Pl. 7, Figs. 9, 9a, 9b) redescribed under Gervais' name a pair of Rudow's type-series of *longiceps*. His description and figures, though inadequate by modern standards, are sufficient to show that *parkeri* is distinct. Taschenberg considered *longiceps* to be a synonym of *cornutus* and as the two hosts are very closely related his opinion may be accepted provisionally, though it requires confirmation because he had apparently seen no material from *Gazella dorcas*. His figures show the following main differences from *parkeri*—head with a much deeper frontal notch, less elongated and with much less convergent lateral margins in the pre-antennal region (especially in the female); male genitalia with basal plate longer and narrower and with parameres apparently much straighter; apex of female abdomen differently shaped. The new species also resembles *Tricholipeurus balanicus* (Werneck), but in the latter the sides of the pre-antennal region are strongly convex.

Male (Fig. 1). Length: 2.00 mm.

Head much longer than broad (cervical index 1.57); frontal notch rather shallow, its median portion forming a smooth concave curve (a very unusual character); pre-antennal region with

PLATE 15.

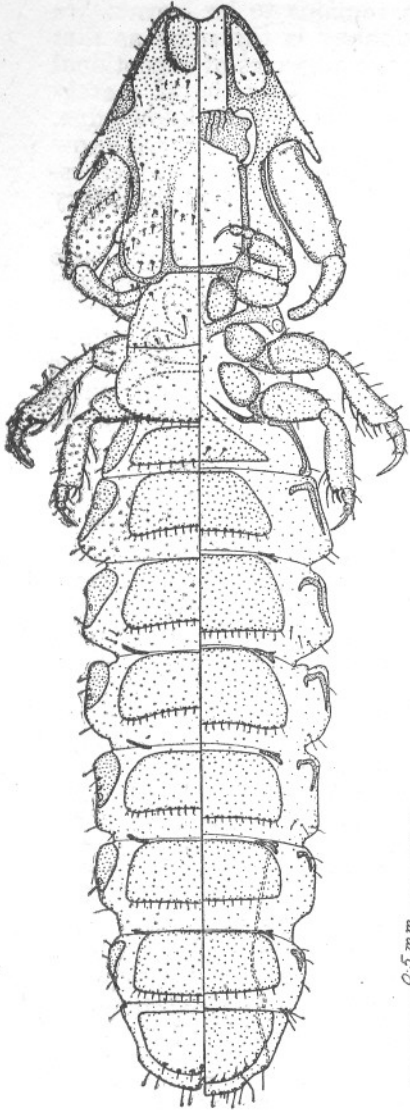


FIG. 1. Dorsal (left hand) and ventral (right hand) views of male of *Tricholipeurus parkeri* sp.nov.

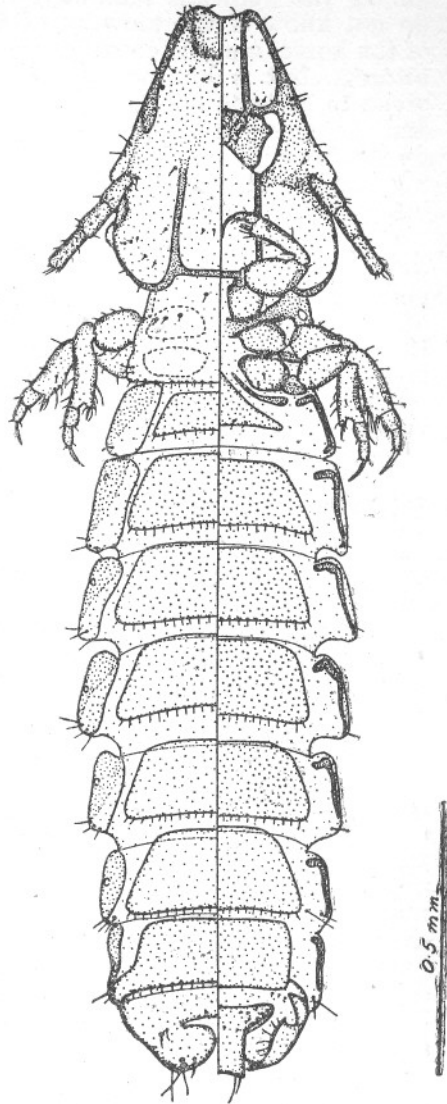


FIG. 2. Similar views of female *T. parkeri*.

PLATE 16.

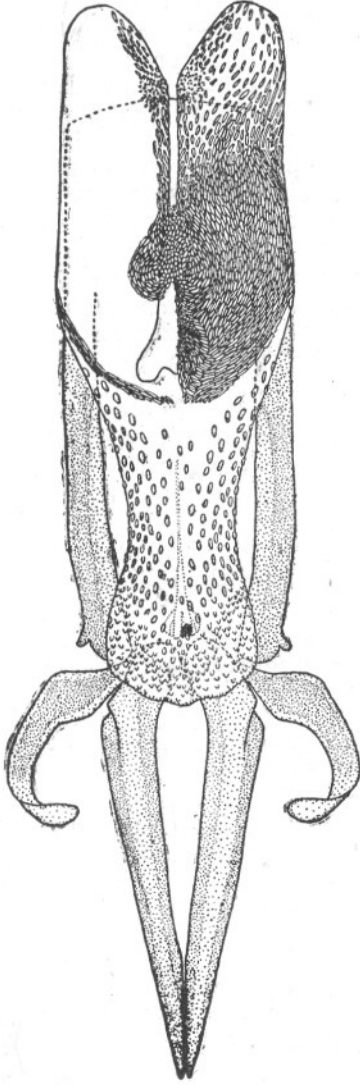


FIG. 3. Dorsal view of genitalia of male *T. parkeri* in the resting position. The ornamentation of the preputial sac is partly omitted on the left side so as to show underlying structures.

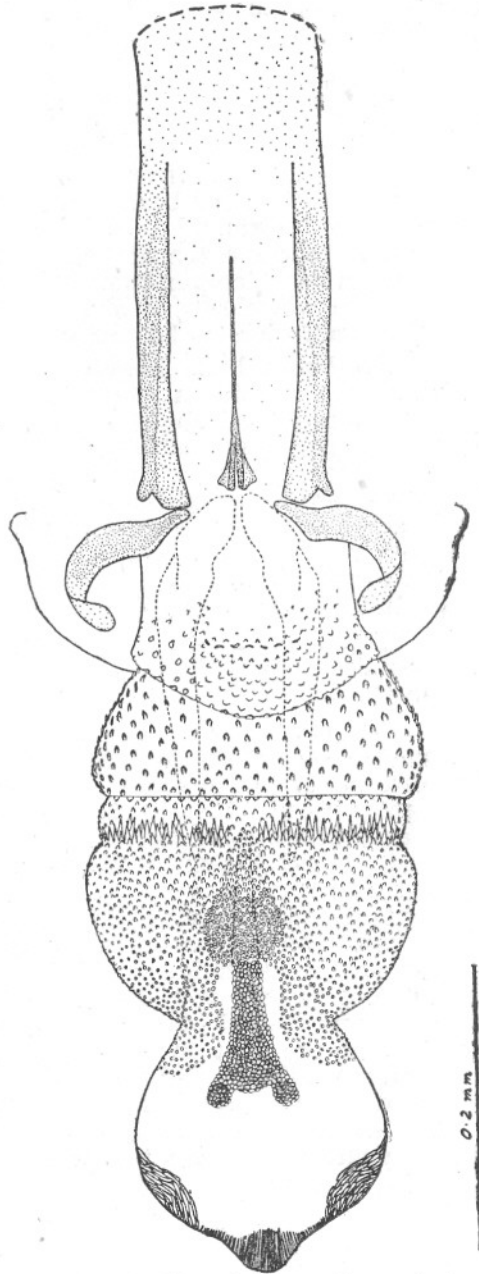


FIG. 4. Dorsal view of exerted male genitalia of *T. parkeri*.

almost straight sides which are strongly convergent anteriorly; temples projecting considerably behind median part of posterior margin of head, but not to so marked a degree as in *T. elongatus* Bedford; trabeculoid processes weakly sclerotised and rather narrow. Antenna with first segment enormous, making up about two-thirds of the total length of the antenna and more than twice as stout as the second segment; second and third segments subequal in length (the third segment shown foreshortened in the figure). Apart from marginal and submarginal setae the dorsum of the head bears a transverse row of eight or nine very small post-epistomal setae, two very small setae on each side internal to the antennal fossa, and a group of five or six small setae on each temple, more or less merging into the outer ends of a transverse row of about eight setae placed on the vertex a little anterior to the temporal groups.

Prothorax little broader than long, almost straight-sided, with on each side a minute seta placed within the margin of the antero-lateral angle, a much larger single tergo-central seta, and an oblique row of four small setae near the posterior margin; prothoracic spiracle moderately large. Pterothorax slightly shorter and broader than prothorax, with convex sides (particularly in its posterior or metathoracic portion) and a row of about twenty setae, of which the outermost and the fourth from the outer end are more than twice as long as the rest, on its posterior margin.

Legs short and rather slender, first pair shorter and stouter than the others, tibiae of second pair slenderer than those of the third.

Abdomen moderately elongate (abdominal index 2.8); its margins very strongly crenulated and very slightly convex; the third and fourth apparent segments the broadest, but only very slightly broader than the second and fourth. Tergal plates single, weakly sclerotised; sternal plates rather more strongly sclerotised. Small Y-shaped sclerites strengthening the ends of the intersegmental grooves are present between each pair of segments from the second and third to the eighth and ninth apparent segments, inclusive. Longitudinal sclerotic bars present on each side of the genitalia, as in most species of the genus. A row of about twenty very small setae on the hind margin of each tergal and sternal plate, these setae less numerous on the tergal plate of the first apparent segment and only about four in number on the sternal plate of the same segment, on the eighth and ninth tergites and sternites the setae are also less numerous and are much larger. Spiracles very small, subequal, present on apparent segments two to seven.

Genitalia (Figs. 3 and 4) with basal plate moderately long and broad (about two and a half times as long as broad) extending to posterior margin of fifth segment, its lateral bars well-sclerotised and slightly forked apically; a well-marked median sclerite, situated at the apex of the basal plate and just anterior to the bases of the endomeres, is of somewhat complicated shape (see Fig. 4). Parameres short (a little more than half length of endomeres), strongly curved, their tips folded inwards and dorsad in such a way as to suggest the beginning of the process by which, in many Trichodectidae, fusion of the tips of the parameres has produced a ring-shaped band. Endomeres long (about three-quarters of length of basal plate), almost straight but with the basal third bent inwards at an obtuse angle so that the extreme bases are in very close proximity with each other. The copulatory sac is of unusual interest because in its exerted state (Fig. 4) it shows very clearly its origin from at least two abdominal segments; the proximal segment has its surface rather densely covered with small triangular teeth; the intersegmental membrane between this and the next segment with larger teeth; the median portion is stiffened internally by a highly-sclerotised dagger-shaped rod which apparently prevents this portion of the sac from being turned inside out when retracted, and its surface is very densely covered (especially immediately over the dagger-shaped rod) with small roundish plaques which are somewhat larger and less dense proximally; the terminal portion has dorsally a latero-basal and central area which is devoid of spicules or plaques of any kind, and ventrally is very densely covered with sclerotised striae which are more or less continuous on the periphery and broken up into small elongate plaques medially (Fig. 3), its apex is heavily sclerotised and striate and of constant and characteristic shape (Fig. 4).

Female (Fig. 2). Length: 1.97 mm.

Preantennal region of head narrower and more regularly convergent anteriorly than that of the male; cervical index 1.4; trabeculoid process much broader than in male. Antenna slender, first segment stouter and slightly shorter than the second, third segment longer than the second but of the same width. Thorax and legs as in male.

Abdomen slightly stouter than that of the male (index 2.5), but not markedly different in shape except distally. The small Y-shaped sclerites in the intersegmental grooves of the male are absent in the female. Tergal plate of terminal segment with a slot which is crescent-shaped in its anterior portion and has a posterior extension with nearly straight and parallel sides (the whole slot resembling in shape the head of a pickaxe with a

portion of the shaft, or a section through the cap and stalk of a mushroom). The posterior part of this plate appears to be continuous laterally with the sternal plate of the same segment (Fig. 5), which is very broad anteriorly, much narrower and almost straight-sided in its posterior portion, and shallowly concave distally. In several other members of the genus this

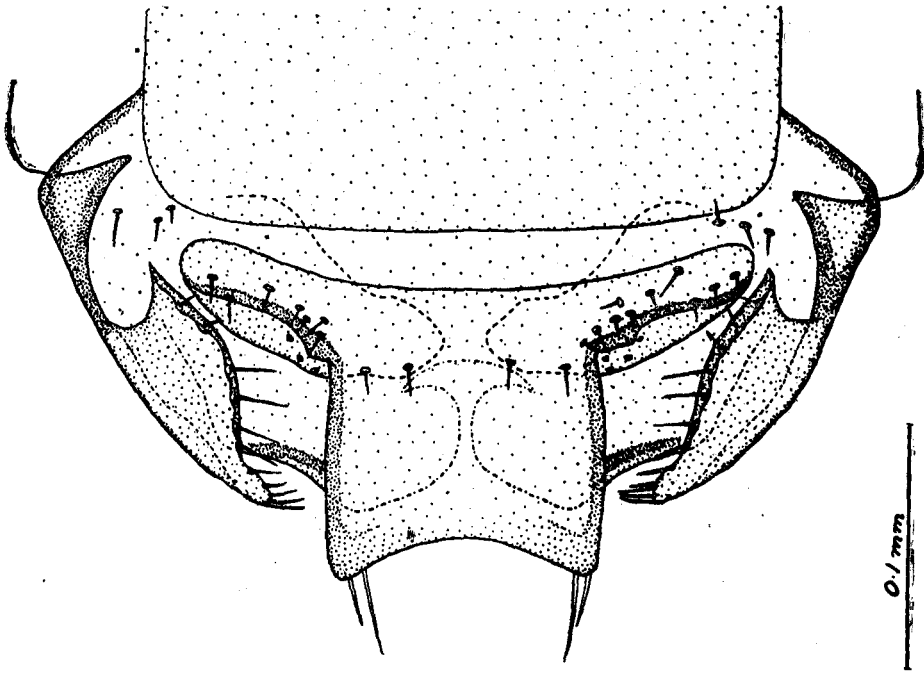


FIG. 5.

FIG. 5. Ventral view of apex of abdomen of *T. parkeri*.

In all the figures broken lines indicate that the structures drawn thus lie below those shown in solid lines.

plate is of somewhat similar shape, but it is much more projecting in *parkeri* than in any other known species with the possible exception of *longiceps*; Taschenberg's figure of the apex of the abdomen of the latter is on too small a scale to be of much value, but appears to show a plate rather like that of *parkeri* but much more deeply emarginate distally.

Copulatory lobes, or gonapophyses, (Fig. 5) apparently of rather distinctive shape, with a very deep bay at the base of the expanded terminal portion, but in all the specimens they are seen in almost end-on view so that their exact shape cannot be made out.

Type-material: Male holotype, female allotype, eleven male and fourteen female paratypes, and a considerable number of teneral and immature specimens collected from the dry skins of two individuals of *Gazella (Eudorcas) thomsoni nasalis* Lönnberg, (Thomson's Gazelle), obtained near Naivasha, Kenya Colony, on 22/1/1941.

The types will be presented to the British Museum when conditions allow, paratypes are in the Coryndon Memorial Museum, Nairobi, and in the Bedford, Hopkins, Peters, Thompson and Werneck collections. ●