

Letters to the Editor

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Eland-Ox Hybrid

THE crossing of the eland and domestic cattle has been reported fairly frequently, and some years ago several cases were alleged in Southern Rhodesia. After a prolonged correspondence (1923), in which assistance was given by the local magistrate, the late Mr. W. Farrer, it was concluded that the reported hybrids were not authentic. The owner stated that they were almost indistinguishable from domestic cattle, and the fact that tame bull elands will readily serve domestic cows seemed a sufficient explanation of the alleged hybridism.

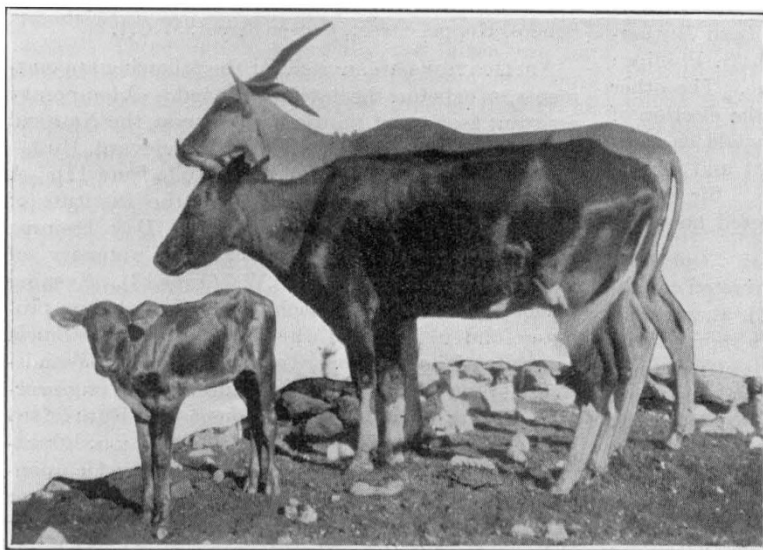


FIG. 1.—Bull eland, Afrikander cow, and hybrid calf, Malpas Farm, Orange Free State.

At the Government Experimental Farm at Cedara, Natal, attempts at crossing have had no result.

It would appear, however, that a successful cross has now been obtained (March 1932) at Malpas Farm, owned by Mr. R. E. Helme, Westminster, Orange Free State, under conditions which would seem to preclude any possibility of doubt. On this farm there were half-a-dozen Afrikander cows, but no bull of any description, except a bull eland which had been obtained from the Zoological Gardens, Pretoria, some three years ago, and this animal had been bred in the Gardens. Mr. Helme, who is a Cambridge graduate and a scientific man, assures me that he has no doubt whatever as to the paternity of the male calf, and in a personal letter states, "It looks extraordinarily like an Afrikander. The chief points of difference are the small pointed ears, slender limbs, heavy dewlap and a fawn colour mark on the side." (Fig. 1.)

The rhinarium would appear to be like that of the ox, but there is some development of the dorsal hump of the eland.

It is, of course, doubtful if the hybrid will prove fertile; but the cross is of considerable scientific interest, since the eland is really very different from the genus *Bos* in many important anatomical characters: and, so far as I am aware, a successful cross be-

tween two mammalian species of different genera has not previously been recorded.

From the general aspect of the young calf it would appear that the *Bos* characters will be markedly prepotent over the eland characters.

In this connexion it would be interesting to ascertain as to how far the chromosome complex of the eland differs from that of domestic cattle, but I do not know if any observations have been made even on the latter.

ERNEST WARREN.

Natal Museum,
Pietermaritzburg,
April 12.

Origin of Insects from Crustacea

THE problem of the origin of insects has for long remained unsolved. In recent years, interest in it has considerably increased and I have myself brought forward arguments¹ which, while still admitting the possibility of a descent from Crustacea, tend rather to the view that insects and Crustacea have no very close relationship.

The supporters of the theory of a crustacean origin for insects rely chiefly upon the attempt to prove that the insect leg was originally a biramous appendage of the type found in the Malacostraca; in other words, that it originally possessed a true exopodite as well as an endopodite (the main shaft of the leg). It has long been known without a shadow of doubt that the lobes of the insect maxillæ are merely endites or gnathobases developed from a uniramous stalk. The only structures which can reasonably be claimed to be exopodites are the *coxal styles* found on the middle and hind legs of the family Machilidæ. These styles closely resemble the *abdominal styles*, found in Machilidæ and other Thysanura, and believed to form part of the reduced abdominal appendages.

So far as I know, nobody has ever succeeded in hatching any Machilid from the egg or in otherwise discovering the first instar of these insects. Heymons once stated (1897) that the abdominal styles of *Lepisma* did not appear until after the insect had hatched from the egg; but he was silent about the coxal styles of *Machilis*.

The position has become something of a 'stalemate', and further argument has appeared to me useless until such time as the first instar of a Machilid could actually be discovered. I have, therefore, fixed my attention on this point for the past two years. Thanks to the co-operation of Mr. Royce Cannon, a student of the University of Queensland, success has at last been attained. Machilidæ are very rare insects in Australia, but Mr. Cannon succeeded in discovering a locality near Brisbane where, amongst deep rubble and decaying leaves below a sheltered wall of rock, a species of *Allomachilis* could always be found. He has recently sent me specimens of the first, second, and many subsequent instars. I am now able to state definitely that this insect hatches from the egg with its abdominal styles fully formed, but *without any sign of coxal styles*. The second instar, like the first, is devoid of coxal styles, and it is only in the later instars that these organs are formed. At no time do they possess muscles, whereas the abdominal styles are provided with muscles from the very start.