

GD/LM

14th March, 1963.

Dr. F. Kuhlrow,
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Bernhard-Nocht-Strasse 74,
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Dear Dr. Kuhlrow,

Thank you for your letter and reprints. Your results, those of Paterson and Burgess, and of myself all show general agreement. The differences in the proportion of males in crosses of fresh-water males to salt-water females is a peculiar one. In mass-crosses (referred to in my Nature article) the proportion of males was not as pronounced as in single crosses using artificial mating techniques (the data on which I am now collecting together). It would seem that in mass matings there is some preferential mating by males which produce female-determining spermatozoa, not totally incompatible with the salt-water ova. Where 100% males occur it would appear that the X-bearing spermatozoa of the fresh-water strains are incompatible with the ova of salt-water strains. Where this incompatibility occurs is unknown - fertilisation may take place but no cell-division afterwards. The unhatched eggs from such crosses show no obvious evidence of embryonic development, but no detailed work on this has yet been done. I may mention here that one paired-mating between Diggi (group A) male and melas female produced 100% hatch and a normal sex ratio, (though the males were, of course, sterile). Crosses producing 100% males invariably show less than 50% hatch, as would be expected.

I am somewhat puzzled over your Bumba strain. From your crosses with Kano and Lagos it belongs to Group A of the two fresh-water forms (the same group as Lagos). The strain we have here

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which also came from Bumba, South Pare, is quite definitely a group B strain. Perhaps there is a mixture of the two forms in this strain. We know that the Muheza strain is a group A strain, and Muheza is not far from Bumba, is it?

I am not entirely convinced that you have any more right to call the Tanga salt-water form a new species than to call the two fresh-water forms separate species. The morphological differences seem to me rather flimsy. I am hoping that Mario Coluzzi, who is doing detailed work on the four forms, will come up with something more definite. In the meantime, I think there is not much point in labelling the forms as separate species until they can be definitely recognised morphologically. There is, in fact, some correspondence going on now between Muirhead-Thomson, Paterson, Mattingly and myself on this subject. Obviously your work will have to be considered also.

We now have both the zoophilic and anthropophilic strains from Southern Rhodesia, kindly sent by Hadjinicolaou. The zoophilic strain appears to belong to group B, but one cross between Lagos male and the zoophilic female produced nothing but males, which were partially sterile at least. This is being repeated. We are now in the process of crossing the anthropophilic strain with A and B strains, and also with the zoophilic strain, but this is not yet completed.

It was nice to hear from you again. I hope you are now fit and well.

Yours sincerely,

G. Davidson;