

DESTRUCTION OF GAME IN NATIVE RESERVES AND  
NATIVE AREAS SITUATED ON THE EDGE OF A FLY  
BELT, OR IN AREAS COVERED BY GAME ELIMIN-  
ATION OPERATIONS.

At a meeting of the Trypanosomiasis Committee held on the 13th January, 1953, I brought up the question of permissitting natives resident in native areas on the edge of a fly belt or within a fly belt to destroy game as a measure designed to enable these natives to protect themselves against a possible advance of tsetse or to intensify the officially controlled game elimination operations. After discussion I agreed to write a memorandum to be discussed at the next annual conference of Provincial Native Commissioners.

Game elimination has been proved to be an effective method of eradicating the open savannah - game loving tsetse, *Glossina morsitans*, not only in Southern Rhodesia but also in Northern Rhodesia, Tanganyika, Uganda and in parts of West Africa. In Tanganyika it has been proved effective against the species of tsetse *G. swynnertoni* and in Uganda it is claimed to have been effective in eradicating the thicket species *G. pallidipes*. It has not proved effective against *G. palpalis* (which feeds mainly on reptiles) or against the dense forest and nocturnal tsetses *G. brevipalpis*, *G. fusca* and *G. austeni*. Game elimination is now accepted by all authorities as an effective method of eradicating *G. morsitans* and is the main method of attack employed in Southern Rhodesia when dealing with this tsetse. The method has been criticised, mainly on three grounds. One that the unique fauna of Africa should not be destroyed but should be preserved for posterity, two that it is a cruel and inhuman method of dealing with the problem and three that it is uneconomical in as much as game destruction has to be carried on indefinitely. If the operations are suspended game may return and there is a very grave danger of tsetse returning to its old haunts.

The first objection is a valid one but it is now concluded that as Africa is civilised, as primitive agricultural and pastoral farming gives place to settled agriculture with restricted grazing for stock and to control annual diseases the big game must inevitably go from the developed areas. The place for game is in game reserves, large enough to support all the animals in the reserve, including migratory species, and adequately supplied with water.

The second objection is one that we cannot accept however repugnant to our finer feelings the policy may be. Few people like destroying game for the sheer lust of killing. We must accept the fact that the eradication of the tsetse and the diseases it carries must over-ride any objections on humanitarian or aesthetic grounds that can be advanced against the policy. Large areas of Africa cannot be left locked up, unproductive and undeveloped, indefinitely.

The third objection is important and must be taken into account. There are only two known and proved methods of eradicating *G. morsitans*. One is to deprive it of its essential food (mammalian blood), the other is so to change the environment by bush clearing that it becomes totally and permanently unsuited to the fly.

Game eradication does nothing to alter the environment except remove the food supply either temporarily or permanently if continued. If the game is allowed to return and the cleared area is not isolated from the uncleared tsetse belt by a game free - cattle free barrier at least 10 miles wide or by natural barriers, tsetse may infiltrate back. The utmost vigilance is required to prevent this happening. Bush clearing, even if not followed up by settlement, does alter the environment in such a manner as to make it unsuitable for tsetse and natural regeneration of the bush is so slow that it may remain in this condition for many years. Bush clearing followed up by settlement will give permanent protection so long as the area is large enough. If settlement is sufficiently dense and the natives are permitted to destroy game, the game eventually goes.

In both East and West Africa all present projects for the reclamation of land from tsetse are based on planned native settlement, first without cattle or small stock. As the fly disappears small stock is introduced and later as the danger of contracting animal trypanosomiasis recedes cattle are introduced. Game is eliminated from the settlement by the simple process of permitting the settlers to destroy it while more controlled operations are conducted to drive game away from the periphery of the settlement.

While game elimination alone can eradicate *G. morsitans* it is very doubtful whether it will be equally effective against *G. pallidipes*. This tsetse is now known to occur in the Sebungwe district and over a very large area in the Urungwe district. Odd specimens have been picked up inside the Urungwe Reserve. Under certain conditions this tsetse can be controlled by bush clearing as has been done on the Eastern Border at Chipinga where it seems that the topography of the country has greatly aided control. Elsewhere in Southern Rhodesia topography is not likely to be helpful and a mere barrier clearing, without organised settlement, would be unlikely to effect control of this species. It now seems fairly clear that we can no longer rely entirely on game eradication to prevent an advance of tsetse or reclaim land from tsetse if we have to deal with a mixed population of *morsitans* and *pallidipes*. In future we shall have to plan all anti-tsetse campaigns on the East African system and continue game elimination with planned settlement.

If native settlement alone is the measure adopted then the density of population must be such that it can clear the land in a comparatively short space of time and maintain the area that has been cleared. Under such conditions the density of human population and eventually their stock may of necessity be more than the land can support and may lead to widespread erosion, poverty and other evils. This has occurred in parts of Tanganyika. If the density of population is too light conditions ideal for the spread of human sleeping sickness and certainly nagana can be created. This occurred in the Fort Jameson area of Northern Rhodesia. The ideal solution is organised game destruction followed at the right time by planned settlement first without stock, later with stock.

In several areas in Southern Rhodesia settlement is being threatened by invasion of tsetse, notably the Mtoko and Chikweso Reserves. In the Urungwe district tsetse has over-run the Urungwe Reserve and the remaining cattle have been removed. The same has occurred in the Mkota Reserve. In the Lutope Special Native Area about half the area is infested with tsetse while native settlement with cattle has been pushed dangerously near to known fly. In the Hartley district the Sanyati Reserve has only recently been cleared of fly. The introduction of several thousand head of cattle into this reserve is not without a certain element of danger. In the Zambezi Valley in the Darwin district cattle are being introduced in increasing number, some of them in areas fairly close to known tsetse.

Spraying or smoking of tsetse areas from fixed winged aircraft or helicopters has been given a great deal of publicity in the press following the success of the Union Government in practically eradicating nagana from Zululand and southern Swaziland. In Zululand the species of tsetse concerned were *Glossina pallidipes* in the Umfolozi Game Reserve and *G. pallidipes* and *G. brevipalpis* in the Hluhluwe Game Reserve. The breeding grounds or permanent habitats of these flies are either thicket or dense forest. By spraying or smoking these breeding grounds, which constituted only about 4% of the total area infested with nagana, they have succeeded apparently in eradicating *G. pallidipes* from the Umfolozi Reserve and almost exterminated both species from Hluhluwe. This method of attack is very costly. It requires the complete isolation of the sprayed area from other infested areas to prevent re-invasion, if a high recurrent annual cost is to be avoided. Such isolation happens to exist in the areas in the Union of South Africa which are involved, but does not exist at all in Southern Rhodesia so that here the heavy cost of artificial isolation would need taking into consideration. In the case of the savanna - game tsetse *G. morsitans* it is estimated that at least 50% of the area would have to be sprayed and the ground control work and pupa casing surveys would have to be very thorough, thus raising the costs still further.

In east Africa a team of scientists working under the Colonial Insecticides, Fungicides and Herbicides Committee is working on this problem, and in particular is trying to overcome the economic difficulties which exist there also, but so far without success. We are in constant touch with the work of this team and are watching the results with interest. At the present time it is not possible to recommend to Government this method of attack, or even research into its practicability since this would very largely duplicate the work being carried out in East Africa with larger resources.

Government is spending a considerable sum of money annually (over £88,000 - including salaries) in protecting these areas from invasion or in reclaiming land from the fly for future settlement mainly by organised game destruction. These measures could be intensified and results obtained quicker if the resident native population were permitted to destroy game in the areas they occupy. In non-cattle areas the game meat obtained would be a

valuable source of protein food. All that would be necessary would be to suspend certain sections of the Game and Fish Preservation Act in certain areas defined by Proclamation in the Gazette. The benefits accrued would be considerable and at the same time the native people would be doing something they enjoy, have been used to in the past and would be doing something to protect themselves and their stock, as well as helping to consolidate the reclaimed area to the benefit of the country as a whole. It is only within recent years that the Native Department have prohibited the destruction of game by natives living in areas covered by Government controlled game elimination operations. In the Doma and Urungwe areas organised drives were common in the past and large game nets were to be found at every kraal. I strongly recommend that the present policy be relaxed in all areas covered by our operations or where there is some danger of fly spreading into fly free areas.

*J. H. Shaly.*

DIRECTOR,  
TSETSE FLY OPERATIONS.

JKC/MMCI.