

1. This clearing was begun in 1932 as an experimental protective measure against G. pallidipes and G. brevipalpis established along the Portuguese border. There were two main clearings, "one on the Buzi River, intended to break the forest connection in the Buzi valley with the forest in Portuguese East Africa, the other on the Chibuzana River, a tributary of the Buzi River, necessitated owing to the continuous bush connection through Bayswater Farm with dense forest across the border. In both cases about one and a half miles of bush in the river valleys have been cleared. Certain small subsidiary clearings making a continuous break have also been made on a number of farms along the elevated border". (Jack, R.W. 1933).
2. In the same paper it is noted that "much of the border consists of open grassland with a few patches of open forest and occasional clumps of high type forest. Climatically the conditions on the elevated border are probably unsuitable for fly and it is considered doubtful if "fly" actually crosses into Southern Rhodesia over these hills.
3. R.W. Jack observed, in June, 1932, that the following farms had been evacuated apparently on account of tsetse fly:- Nayswater, Fallowfield, Fendragon, Southdown, Eastleigh, Helvetia, Roslyn, Woodbine, Dingley Dell, Devon, etc. Losses had occurred up the Buzi as far as Hartebeestnek, and there were now no European cattle below this farm in the valley. Cases also occurred up the Mhane, a tributary of the Buzi, as far as Newcastle and up the Chibuzana to its source on Wolverhampton. (Record Book, p.346). The same report notes details of trypanosomiasis history on a large number (24) of the border farms. Native cattle, as would be expected, suffered trivial losses as compared with European. There is a suggestion that "the effect of moderate grazing and the enforcement of the Herbage Ordinance has been to favour the spread of bush". (The text suggests that this Ordinance discouraged grass fires). "Gifford on Wolverhampton is of opinion that heavy grazing as in paddocks tends to keep down Parinari as the cattle set the young growth (but general grazing, I judge, encourages it by keeping down grass fires)". (p 356)
4. Clearing operations were started during the first fortnight of August, 1932. A year later there appeared to be a marked improvement on farms protected by the clearing, although cases were still very numerous on <sup>Little</sup> Swan, Gungunyana, Houtberg, etc., which were not protected. It is to be noted that at this time there were fairly heavy losses among native stock in the Chikore area, although surveys on the Portuguese side failed to find tsetse. (However, a tsetse was taken 3 miles from Chikore on the footpath between Chikore and Mt. Selinda, in 1929. It has attacked a horse. Unfortunately, because gorged when taken, it was difficult to identify when received in Salisbury. It was "about the average size of pallidipes"

have been attempted on the border.

6. The theoretical basis for the clearing is given as follows:- "The investigators in Zululand (Harris, I suppose J.F.) could not induce pallidipes to follow cattle for any distance and there is no reason to think it would follow game more persistently". Jack states that "G. morsitans will follow man for 10 miles or more and even in the absence of traffic will cross quite a wide strip of country". The implication is that barrier clearings are no good against morsitans but may work against G.pallidipes.

7. How the conception of the clearing changed in later years is apparent from this passage:-

"The clearing was rendered feasible by the fact that open grassland predominates along the border concerned and that the forest requiring removal covered practically less than 10% of the ground. Also that by utilising certain high ridges the clearing could be made very narrow along certain sections" (see p.17)

8. During the three years, 1932-5, the clearing was extended to cover 30 odd miles of the border, at a cost of £1050. The maintenance of the clearing had now appeared as the main difficulty (Jack,1935).

9. On the evening of 29th October, 1933, a female pallidipes was taken on an African in a camp 1 mile South of Beacon 92 on Grampians, on the Nyamadzi River (Records, p.376). Reference to an old map of the clearing suggests that this was high up on the hills and that in certain circumstances, at any rate, tsetse might cross the high hills (see.p.2 above).

10. In his 1936 Annual Report Jack (1937) states "The beneficial effect of the 35 mile anti-tsetse clearing-----has been most marked.-----The clearing has not been extended but protection work has been carried out and all regrowth slashed". It is not clear what is "protection work". Presumably it is the felling of trees, etc., on farms within the clearing area, other than the riverine and other forest connections which were only filled in the original plan - see p.1.

11. In 1937, however, (Jack,1938), the good results at first obtained were not fully maintained and there were 60 cases with 30 deaths. "As an additional precautionary measure the clearings were made nearly a mile wide at the junction of the Nyamadzi and Cheredzi Rivers".

12. So far the only tsetse mentioned near the clearing are G.pallidipes and G.brevipalpis, but in 1936 it was known that the morsitans belt of P.E.A. was moving westward and in 1937 "3 specimens were caught on the Busi River at the Gogoyo Road, a point which is not more than 5 miles from the border clearing on the Nyamadzi River."

13. In 1938 cases continued to occur in the neighbourhood of Mount Selinda and on all farms with connections to the Nyamadzi and Cheredzi Rivers.

"suspected". (see Table).

15. The figures given in Chorley's 1940 Report of 132 cases suspected on 9 farms (with 24 deaths) was stated to be a great improvement which followed an extensive programme of widening the border clearing which began in 1939, and was continued in 1940, particular attention being given to the area between the Busi and Cheridza rivers. In this year 215 fly traps were erected. It was shown that G. pallidipes was more widespread than G. brevinervis and was caught near the top of a range of hills 1500 feet above the valley of the Inyamadzi.

TABLE I. Eastern Border Farms. Number of cases and number of farms infected, with mean number of cases per infected farm. (From Annual Reports : R.A.J. Bulletins).

| <u>Year.</u> | <u>No. of Cases.</u> | <u>No. of Farms<br/>infected.</u> | <u>No. of cases p.<br/>infected farm.</u> |
|--------------|----------------------|-----------------------------------|---|
| 1939         | 311                  | 30                                | 10.3                                      |
| 1940)        | 132                  | 9                                 | 14.7 (suspected cases)                    |
| " )          | 20                   | 6                                 | 3.3 (diagnosed)                           |
| 1941)        | 252                  | 33                                | 7.6 (suspected)                           |
| " )          | 105                  | 24                                | 4.4                                       |
| 1942         | 329                  | 38                                | 8.6                                       |
| 1943         | 270                  | 33                                | 8.2                                       |
| 1944         | 63                   | 17                                | 3.7                                       |
| 1945         | 132                  | 23                                | 5.7                                       |
| 1946         | 54                   | 18                                | 3.0                                       |
| 1947         | 35                   | 9                                 | 3.9                                       |
| 1948         | 96                   | 9                                 | 10.7                                      |
| 1949         | 87                   | 19                                | 4.6                                       |
| 1950         | 62                   | 10                                | 6.2                                       |
| 1951 =       | 47                   | 8                                 | 5.9                                       |
| 1952         | 28                   | 7                                 | 4.0                                       |
| 1953         | 18                   | 6                                 | 3.0                                       |
| 1954         | 16                   | 4                                 | 4.0                                       |
| 1955         | 57                   | 15                                | 3.8                                       |
| 1956         | 23                   | 13                                | 1.7                                       |
| 1957         | 69                   | 16                                | 4.3                                       |

= From this year onwards the year is from 1st October to 30th September.

16. In 1941 a considerable increase in the number of cases of trypanosomiasis was noted. It is, perhaps, a coincidence (or, perhaps not) that in the year following the completion of the original clearing (1936) the Chief Entomologist drew attention to the benefits it had brought, but in 1957 the good results were not maintained; while the good results noted in 1940 following the 1939 clearing extension was also followed, in the

| Month  | 1 | 2 | 3  | 4  | 5  | 6  | 7  | 8  | 9 | 10 | 11 | 12 | TOTAL. |
|--------|---|---|----|----|----|----|----|----|---|----|----|----|--------|
| Deaths | 9 | 7 | 22 | 55 | 45 | 27 | 18 | 14 | 2 | -  | -  | 2  | 201.   |

There is a marked peak in April/May.

23. By contrast to the above we can compile monthly means by collating the records from an incomplete set of Veterinary Reports beginning August, 1952, and ending in October, 1957. We have, in fact, records for 45 months out of the 62 which complete the period. The following table summarizes the data:-

| Month:-                                     | 1 | 2 | 3  | 4  | 5  | 6 | 7  | 8 | 9 | 10 | 11 | 12 | TOTAL. |
|---|---|---|----|----|----|---|----|---|---|----|----|----|--------|
| T.Congo-l<br>lense                          | 3 | - | 25 | 22 | 7  | 2 | 3  | - | - | -  | -  | -  | 63     |
| T.vivax                                     | 6 | 1 | -  | 5  | 2  | - | -  | - | - | 1  | -  | -  | 15     |
| T.brucel                                    | 1 | - | -  | -  | -  | - | -  | 1 | - | -  | -  | -  | 2      |
| Uniden-<br>tified                           | 1 | 2 | 32 | 2  | 5  | 2 | 18 | 5 | - | 5  | 2  | 2  | 76     |
| TOTAL                                       | 9 | 6 | 32 | 32 | 29 | 9 | 20 | 9 | 0 | 6  | 2  | 2  | 156    |
| No. of<br>months<br>date<br>avail-<br>able. | 3 | 3 | 4  | 4  | 4  | 3 | 3  | 5 | 5 | 5  | 3  | 3  |        |

For the most part these figures represent cases and not deaths. It will be noticed also that because of this the peak has moved backwards, so that the peak months are March and April as against April and May in 1933. Where diagnosis has been complete the data show that congolense infections predominate, with vivax apparently much fewer and brucel only very occasional, as we would expect.

24. Other information from the Veterinary Reports shows that there are about 125 European farms in Chipinga, of which rather under 30 would appear to be in the danger zone. The total number of European owned cattle in the District appears to have risen from 60,300 in August, 1953, to 67,800 in August, 1955. We have no other figures for comparison, but undoubtedly there has been an immense increase in the European owned cattle population since 1933. Recent increases, one may suppose, are a response more to improvement of the farms than to trypanosomiasis control. Improvements due to trypanosomiasis control have been having an increasingly smaller effect during the last 10 years (see para.20.)

25. In 1956-7 expenditure of tsetse funds in the district amounted to about £7,500. In the current year, the first six months expenditure suggest that the figure will be higher.