

*The Locust Invasion of Zululand 1933–1937**

Introduction

Over the years a number of serious invasions of red locust (*Nomadacris septemfasciata serville*) have occurred in Zululand. Those of 1894–1897 and 1905–1908 were particularly severe. In August 1894 swarms of locusts entered the coastal belt of Natal and Zululand from the north. These caused damage to mealie lands and cane fields, stripping them of all their leaves. The locust swarms of 1896 proved to be the worst and, coupled with the severe drought of late 1895, caused severe hardships to the black population in Zululand. In some districts a 60–80 % destruction of crops was reported.¹

The locust invasion of 1905–1908 was one of the many setbacks the first sugar cane planters in Zululand had to face. In 1907 the locusts stripped the fields of newly-planted cane around Amatikulu and affected the output of the first cuttings of Zululand cane in 1908. However, the eradication campaign for this outbreak was better organized than any of the previous efforts, with locust officers being appointed in each magisterial district. In addition, gangs of black labourers were recruited from the reserves at 6d per day to dig trenches in the paths of the immature locusts or hoppers. Long screens were erected to funnel the hoppers into the trenches which were then covered with soil. ‘Black sugar’, or treacle mixed with poison, was also used for the first time during this invasion.²

For a number of years after this invasion Zululand was relatively free from locust swarms. But in the 1930s the region was once again faced with the locust scourge. This invasion from the end of 1933 to 1937 was one of the worst on record and coming as it did so soon after the economic hardships of the Great Depression, its effects on the inhabitants of Zululand were extremely severe.

The campaign against this red locust invasion of the 1930s was complicated by the expansion of the area under sugar cane along the coastal lands of Zululand. In the coastal belt there were no longer any large open spaces for the hoppers to congregate and form a mass as had happened previously, or as was the case in the dry areas of the interior. For kilometre upon kilometre the only open spaces amongst the cultivated cane were the roads, railway lines and the cane breaks, and it was feared that the hoppers would not come out of the cane to congregate so that they could be seen, reported and combated by a spray gang. A further complication was the necessity for a large number of spotters and numerous small mobile spray-gangs who would have to deal with each small swarm separately.³

* This article is based upon research being done on the sugar industry in Zululand.

The red locust invasion also created other problems not associated with the more common brown locust (which had previously invaded the Karoo, Kalahari and Orange Free State areas in 1925). The female red locusts lay eggs two or three times during their egg-laying stage and in a different place on each occasion, i.e. their egg-laying was not concentrated in one spot as in the case of the brown variety, and so red hoppers were found scattered all over the affected areas. In addition, eggs laid in a particular spot did not all hatch simultaneously, while the wet weather at the end of 1933 and early 1934 led to ideal conditions for hatchings all over Zululand. All these factors complicated the anti-locust campaign during the invasion of 1933–1937.⁴

The invasion begins, 1933

The first swarm heralding the start of the new invasion was reported from northern Zululand on 14 August 1933 and by 17 December had reached Amatikulu in southern Zululand.⁵

In January 1934 the editor of the *South African Sugar Journal* commented:

The locusts have again settled in the country after nearly 30 years' absence, and we shall be fortunate indeed if we can get the canefields clear of them within the next two or three years.⁶

These words were to prove most prophetic and the situation all over Zululand was soon most serious. A locust officer from the Cape Province, on inspecting the extent of the infestation at Ntambanana during mid-January 1934, commented that he had 'never in all my experience seen such a mass of hoppers. It will take an army to eradicate them.'⁷

The eradication campaign indeed took on the connotations of a battle. The various efforts and results were reported in the local newspaper, the *Zululand Times* under headings such as:

ZULULAND ON THE WARPATH
WAR ON THE HOPPERS
MILLIONS OF HOPPERS CAUSE EXTENSIVE DAMAGE
THE BATTLE OF THE LOCUST INVASION
TERRIFIC BATTLE WITH LOCUST INVASIONS

By May 1934 the *Zululand Times* reported:

The locust position in several districts of Zululand has assumed grave and alarming proportions. Enormous swarms are on the wing in all directions and it seems well nigh impossible to cope with the situation. The damage done to cane fields and wattle plantations already runs into thousands of pounds. The position is indescribable and must be seen to be realized.... Locust swarms are everywhere and flying in all directions.⁸

A sugar farmer at Mtubatuba, E.R. Harrison, writes thus about the 1934 locust invasion:

They came in their millions in swarms stretching as far as the eye could see, so thick at times that they obscured the sun and darkened the sky. The noise of their wings as they approached filled the air with foreboding. Towards the evening the swarms would settle for the night on trees, sugar cane, garden plants or indeed anything green. All night long they would chomp everything within reach. The great noise of their



A dense swarm of locusts over sugar cane fields during the 1934 invasion. The photograph was taken at noon on a sunny day, the density of the swarm almost blotting out all light. The smoke in the lower right part of the photograph is from smudge fires lit to try to protect young cane.

(*Photograph: SACGA*)

chewing would gradually cease towards morning as they demolished every edible morsel within their reach. After they had departed the following morning the scene was one of unbelievable devastation, only sticks, branches and stumps remained as stark evidence of their nightmarish sojourn.⁹

By August 1934 the situation in Zululand was extremely serious and at a meeting of the Zululand Farmers' Union the MP for Zululand, George Heaton-Nicholls, made an urgent appeal:

Everyone must now pull their weight in helping in every possible way in the war of destruction of the locust if they want to save Zululand from losing its chief industry [sugar cane].¹⁰

But the eradication campaign experienced problems right from the start and besides practical difficulties was also faced with organizational problems.

Eradication campaign, 1934

It was only towards the end of January 1934 that the government began to organize the locust-eradication campaign. R.C. van Wyk was appointed senior locust officer, and from his headquarters at Empangeni he controlled the area from Pondoland through Natal up to and including the low-lying parts of Hlabisa and Mahlabatini. A second senior locust officer, J. du Toit, based at Magut in the Ngotshe district, was appointed for the highveld areas of

Hlabisa and Mahlabatini as well as the Nongoma, Ubombo, Ingwavuma, Ngotshe, Babanango, Piet Retief, Paulpietersburg and Vryheid districts. Each district, which was divided into clearly defined areas, had a district locust officer who controlled each area together with his assistants. In almost every district a poison depot and numerous sub-depots were established to facilitate the distribution of poison and spray pumps, which were provided free of charge by the government. Although each locust officer had his defined area, they readily co-operated in tackling heavy hatchings in other districts. The district locust officers continually visited each area under their jurisdiction and in some districts, like that of Lower Umfolozi, contact between locust officers was established by telephone with a control office (in Empangeni), so that the position of swarms was known at all times.¹¹

At the start of this campaign there were numerous experiments with various poison baits, traps and other methods of destroying the hoppers. R.M. Bechard, chief chemist at the Amatikulu Mill, experimented with a mixture of resin and methylated spirits which, when sprayed on locusts caused them to die within an hour or two; unfortunately methylated spirits was fairly expensive and difficult to transport. Bechard also experimented with various poison formulas and one, whose active ingredient was calcium arsenate, was first tried out successfully under ordinary field conditions by a group of Inyoni farmers who became convinced that it was the most effective spray in wiping out swarms in their cane. However, the poison issued by the government was sodium arsenate which had certain drawbacks, amongst which was the fact that it killed off the cane and burnt vegetation, poisoning the veld for livestock. It also burnt the hands and other exposed or sensitive parts of the men working with it.¹²

To avoid such results weaker solutions of the poison were used while alternative methods of destroying the locusts were also investigated. A special 'Bostow' pump, which puffed out pure dry arsenate dust at a reasonably low dosage rate, was tried. But the use of this pump was later abandoned, mainly because it was too easy for an impatient operator to increase the dosage to dangerous levels by a little rough handling. The ZSMP mill at Empangeni developed a method of trapping, using treacle — virtually fly-paper on a large scale. The value of this method was that it introduced a means of destroying hoppers without the use of poison. The development of this method had been in response to the fears of using poison on the Empangeni commonage, since the poison was a threat to the cattle that grazed there. Spraying by aeroplane was also commenced in northern Zululand during September 1934. The first operational base for spray planes was at a hastily cleared landing-ground on the Makatini Flats in the Ubombo district. This was later moved to Gollel near the Swaziland border. The spraying further south was done from a landing strip east of Mtubatuba, specially constructed for the campaign. The South African Air Force was called in under the command of a Lt Hingeston working in collaboration with the Department of Agriculture, and several entomologists led by Dr T.J. Naude. Two single-engined Westland Wapitis were used as spotters to direct a three-engined Hercules aircraft fitted to take one ton of sodium arsenate powder for dusting the locusts on their roosts.¹³

Eradication problems

Unfortunately the 1934 campaign ran into problems due to miscalculations by

the Department of Agriculture. Even though spray pumps and poison were supplied free of charge, there were constant complaints about insufficient supplies. In addition, on the instructions of the government locust officers, farmers were told not to interfere with the hatching of hoppers, but to wait until the hoppers congregated in mass formation before destroying them. This was a mistake, for as soon as the hoppers hatched they moved into the sugar cane causing immense damage. These hoppers never came out of the cane in mass formations, and without actually destroying the cane they could not be tackled. In the early part of the campaign (May 1934) the planters were faced with a dilemma: the sucrose content of their cane was so low that they would lose heavily if they cut it immediately; but if they left it the locusts would destroy it almost completely. Although many locusts were eventually killed using various methods — trenches, treacle traps, smudge fires, poison-spray pumps and even spray pumps adapted as flame throwers — many more reached the flying stage. Furthermore there was an inexplicable delay in organizing the campaign in the Native Reserves and Crown Lands, from which large swarms later emerged, causing even more damage to the cane.¹⁴

One other overall problem was the fact that the sodium arsenate poison spray killed the cane, so weaker mixtures were tried. But many cane planters flatly refused to spray their cane fields with the poison. In addition, farmers were warned not to pasture stock on areas where locusts had been sprayed until a good shower of rain had fallen. Stock losses had occurred where farmers had ignored this advice. Accordingly, in December 1934, the South African Sugar Association was forced to issue to every member a circular in which farmers were urged to spray the hoppers wherever they occurred on a farmer's property. Farmers were assured that experiments had been conducted proving that no harm would befall sugar cane if it was sprayed with a weak solution of sodium arsenate, which was adequate for killing locusts in the hopper stage. Eventually, towards the end of January 1935, a new poison, calcium arsenate, also became available for general distribution. This poison did not need to be diluted as it had no effect on the cane. However, regardless of this new poison, new and better methods were tried throughout 1934.¹⁵

In desperation some farmers had burnt their cane fields to try and destroy the locusts and then immediately cut the cane and sent it to the mill. This, however, lowered the sucrose content. An innovation of the 1934 anti-locust campaign was the adaptation of the poison-spray pumps into hand-held flame-throwers. Power paraffin was shot through a wire ring covered with cotton wool, sacking or asbestos wool and attached about a metre in front of the pump nozzle. The ring was set alight so that the paraffin stream ignited as it passed through it. The flame-thrower method was in wide use by December 1934, and was particularly suited to the wattle plantations in the Melmoth district. The flame-thrower gangs brought the locusts out of the trees on to the ground where the supporting poison-sprayers could spray them.¹⁶ In the words of one newspaper reporter, who witnessed this method in operation:

The pumps threw 80 ft paraffin flames into the branches and for hours a hailstorm of locusts descended on the workers. The wriggling mass choked spruits, crawled up tree trunks and lay in thick drifts against boulders and hillocks of crushed undergrowth and was then sprayed with arsenical poison and left to die.¹⁷

This method was not without its dangers and claimed its first casualty in



The airstrip at Mtubatuba with the Hercules standing in front of a Westland Wapiti. Drums of fuel and sodium arsenate poison are stacked in the foreground.

(Photograph: E. R. Harrison)

May 1934 when a locust officer, P. Cummings, working in the Eshowe district, spilt paraffin over himself, caught alight, and subsequently died of his burns.¹⁸

A new poison bait was also developed using finely chopped bagasse (the cane residue left over after crushing and extraction of sucrose) mixed with the poison and treacle. The bagasse was so fine that it was far less dangerous to animals than chopped poisoned cane which lay on the ground and was a great temptation for animals. It was discovered that the locusts sunned themselves in the mornings along the breaks and edges of the cane fields and it was in these places that the bait was laid. This new bait proved particularly successful and the milling companies supplied the bagasse free of charge.¹⁹

Damage and losses

The actual damage done to the cane by the locusts was immense, with virtually no canopy left on the mature cane by the end of March 1934. During May and June 1934 the cane farmers stood by helplessly while swarm after swarm arrived in the cane belt from the north. They were so thick that they came as a heavy cloud and wherever they settled they did great damage, not only to cane but also to the sorghum and maize crops in the northern districts of Zululand and Natal.²⁰

On the farm of Richard Rouillard, the pioneer farmer of Magut in northern Zululand, his daughter Virginia remembers the destruction caused by the locusts and the desperate measures taken to protect their maize crop.

Just when the mealies were looking green and lush we would see a large dark brown cloud appearing between the distant hills to the north. As they came over the farm in a thick mass almost obscuring the sun, they would fall with sickening thuds on to the ground beneath and on the trees whose branches broke under their weight. In a car one drove over

roads made slippery by their crushed bodies, and peered through a windscreen spattered with dead and dying insects.

In the fields, soon no green was visible and the mealies sagged and bent under their load. One could hear them chewing and knew that in less than half an hour the whole crop would be gone. Then they would rise in a cloud and settle on the next field. As soon as they were sighted, everyone on the estate, in the lands, in the sheds, in the house, grabbed the nearest tin [can] and ran as hard as they could to the chosen field to start beating [on the tin cans to make a noise]. Sometimes it worked. Dad would stand at the back door handing out anything he could lay hands on. Every pot, pan and tray in the house was covered in dents from past locust invasions.²¹

The wattle plantations also had their foliage stripped, and branches were broken off by the weight of 'roosting' locusts. On one farm:

the branches of 40-year-old gum trees snapped under the weight of the locusts and fell to the ground. The patter of falling locusts and crashing branches sounded like a violent hailstorm.²²

Some respite was given by the heavy rains in June 1934 when locusts began to die from a fungus. Unfortunately it was not found possible to create the fungus in artificial media.²³

The actual losses to farmers were considerable and in the 1934 cutting season, cane planters were getting only 50 % of the normal sucrose level from their cane. There was also an estimated reduction of approximately 300 000 tons of cane, or 25 % of the Zululand crop. This meant a loss of 30 000 tons of sugar which had implications for the sugar mills in terms of throughput and idle capacity. The Umfolozi Co-operative Sugar Planters (UCOSP) alone lost revenue to the extent of £122 000 while 70 000 tons of cane were lost on the Mfolozi flats. The Zululand Chamber of Commerce put the cost of the locust invasion to the Zululand sugar industry for the 1934 season at approximately £1 million. This loss took into consideration the reduced output of sugar together with the losses borne by the mills and planters in the work of locust destruction. A further loss had to be borne by the planters whose standing sugar crop had been damaged by the locusts to such an extent as to destroy its value. As a result this cane, both fully mature and young cane, had to be cut down and left on the fields to protect the roots. Consequently planters had to wait for two years before they could cut replacement crops.²⁴

As an incentive to eradicate the locusts, the Zululand Chamber of Commerce had offered a financial reward to anyone who developed a fungus to kill them. (A natural fungus had wiped out the locusts at the end of the 1905–1908 invasion). As a further incentive the chief locust officer for Zululand, Col. J.H. Breytenbach, had recommended that to encourage black inhabitants of the reserves to assist in locust eradication, they receive two shillings and six pence per bag of locust eggs. The Zululand Chamber of Commerce had gone further by requesting the government to extend this incentive to include a reward for locusts in the hopper stage.²⁵

A number of problems had been encountered with regard to the eradication campaign in the reserves. The failure by chiefs to report hatchings in their reserves was looked upon as a serious offence. In one such case on 10 January 1935, Chief Mhawu Mtiyane, in charge of Native Reserve No. 6 was fined £20

(a considerable sum at that time) or two months hard labour by the magistrate of the Lower Umfolozi district after it was found that the chief had 'wilfully neglected his duty after having been repeatedly warned', failing to report hatchings of hoppers. It was hoped that the heavy fine would serve as a warning to other chiefs. To further ensure their co-operation the magistrates held a series of meetings with the chiefs in each district.²⁶

Re-organization of eradication campaign

At the end of June 1934 the government, pinning its faith on the fungus disease and hoping that nature would take its course, announced the disbanding of the anti-locust organization. Hundreds of locust workers were discharged and the distribution of locust poison was stopped. But within a couple of days of the order to discontinue operations, large swarms of locusts were reported to be advancing steadily south from the Mozambican border, and the order to cease operations was countermanded. In addition, the locust eradication campaign was also re-organized. A meeting, attended by the Secretary of Agriculture, Dr P.R. Viljoen, the MP for Zululand, G. Heaton-Nicholls, all the magistrates of Zululand, the district locust officers and representatives of the various farmers' and planters' associations was held in Eshowe on 7 July 1934. This meeting had stemmed from the complaints being voiced about the unpreparedness of the Department of Agriculture. The department had expected a far smaller invasion, confined to the coastal areas. Consequently they were taken by surprise by the size and extent of penetration into the interior of the actual invasion.²⁷

One result of this meeting was that magistrates would in future be responsible for the organization and expenditure in their own districts. Each magisterial district was also divided into wards while a committee of four farmers was to be appointed in each district, to work in collaboration with the magistrate. Finally, Col. J.H. Breytenbach was appointed as the new senior officer in charge of the whole of Zululand and the north coast of Natal with his headquarters in Durban. It was hoped that this re-organization would halt the invasion in the new season.²⁸

The SA Sugar Association had also formed a Locust Committee to keep an eye on the organization of the eradication campaign. They were able to prevail upon the Department of Agriculture to issue calcium arsenate poison instead of the sodium arsenate favoured by the Department but which, the planters held, damaged the cane.²⁹

The hatching season 1934/35

The new hatching season was approached with renewed confidence. Hopes had been raised at the end of November 1934 when it was reported that some locust eggs collected by farmers showed signs of being full of maggots. By the end of December in some areas the maggot infestation of locust eggs ranged from 30–50%. Unlike the previous year, the hatchings in December 1934 were attacked immediately on being reported and large-scale destruction of hoppers was reported throughout Zululand. However, an added problem being experienced was that since the eggs were laid in scattered areas over a long period, hoppers were continually being hatched. The heavy rains at the end of 1934 also hampered the campaign. But by March 1935 practically the whole of the Zululand sugar cane lands were clear of hoppers.³⁰

After this successful campaign against the hoppers the farmers were again disappointed when at the beginning of April 1935 huge swarms were reported to be flying south across the Mozambican border. Large-scale baiting on the ground and dusting by aircraft were resorted to in an effort to destroy the locusts before they started laying. A border guard of 200 white locust officers and supervisors, assisted by hundreds of blacks in mobile gangs, was posted along the Mozambican border. There were also the mobile gangs in each district (fourteen in the Lower Umfolozi district alone), so the locusts had to pass through section upon section of locust exterminators. But, despite these precautions, by May the swarms had reached the Empangeni-Kwambonambi cane belt causing much damage to the cane. The planters on the Mfolozi Flats asked the government to send an aeroplane to assist in the work of spotting and destroying the locusts in the ULOA swamps near the St Lucia estuary where the infestation was very heavy. On 12 May 1935 reports from all over the cane belt were received of the arrival of the biggest swarms yet experienced. One was estimated to be three kilometres wide and twenty kilometres long and it took two and a half hours to pass a given point. To assist in the efficient eradication of these flying swarms, district locust officers were stationed right up to the Mozambican border, and the positions of the swarms were reported daily so that they could be dealt with effectively.³¹

Unfortunately the mobile spraying-gangs were disbanded by the government on 21 November 1935 even though there were still numerous locust swarms flying around the Zululand cane belt, especially in the Empangeni-Kwambonambi-Mtubatuba area. The reason given by the government for abandoning attempts to combat the flying swarms was the mobility of the swarms, some of which were capable of travelling 80–160 kilometres a day, making it impossible to predict where they would settle. Moreover, they often settled in places that were quite inaccessible. An additional problem was the sheer size of some of the flying swarms, which would have necessitated the concentration of large numbers of mobile gangs in one place to be able to combat them effectively. The only effective method of combating the extremely large swarms was by dusting them with poison from aeroplanes. But the poison used for this purpose was sodium arsenate, which unfortunately resulted in the poisoning of the whole area treated, endangering the lives of stock. Obviously the government was reluctant to make use of this method of destruction, so the farmers had to continue using other methods, in particular a new mealie meal-based poison bait.³² (During the first full year (1934) of the locust campaign in Zululand over £1 200 000 was expended, while in the second year a further £400 000 was spent.)³³

Luckily for the farmers, nature played its part in reducing these flying swarms. A period of drought killed off large numbers of locusts and prevented egg-laying, while large-scale destruction occurred through the depredations of huge flocks of kestrels, tick birds and European storks which followed the flying swarms wherever they went. Many of the eggs laid were also infested with maggots, and it was hoped that the 1936 campaign against the hoppers would end the locust epidemic. In addition, the new mealie meal poison bait was available in larger quantities and being finer, proved more effective than the bagasse-based bait previously used. It was also safer for use in areas where cattle grazed, since it was spread so thinly that there was no danger of animals taking in a sufficient quantity for them to be poisoned.³⁴

The mealie meal bait, containing 1% sodium arsenate, was mixed at

government mixing stations (established at Eshowe, Empangeni and Mkuze) and issued in 45 kg bags in a dry state. Before spreading, it was moistened until as wet as mash, then it was thinly scattered near hatching hoppers at the rate of approximately 64 kilograms dry weight to a hectare. The best time to scatter this amongst hoppers was found to be in the evening or early in the morning when they were least active, since once they were on the march the hoppers did not stop for the bait. The advantages of using this poisoned bait were that it was quicker and cheaper than spraying and there was no danger of stock poisoning unless large lumps were left lying around. To overcome the difficulty of destroying the hoppers in the tall cane, the new mealie meal bait was moistened sufficiently to make it stick on the canopy of the cane where the hoppers readily ate it.³⁵

The 1936 campaign

The 1936 campaign against the hoppers in Zululand was again very successful, especially with the greater use of the mealie meal bait. But in March 1936 further hatchings occurred in the Kwambonambi area and extensive damage was done to crops. Unfortunately the government had reduced their operations as much as possible to save on costs and were also under the impression that the invasion was over by the end of January 1936. The Agriculture Department also suspended the work of the mobile squads even though various planters' associations appealed to the government for it to continue. By mid-May it was being reported that the swarms in the Ingwavuma and Ubombo districts were more numerous than in 1935. Unfortunately large numbers of swarms were still coming across the Swaziland and Mozambican borders, and by June these swarms from the north had reached the Empangeni district, causing damage not only to sugar cane but



Locust swarm at Richards Bay, 1936.

(*Photograph: Senator A. Bozas*)

also to the crops of mealies and sorghum in the reserves.³⁶

Throughout June and July 1936 reports of swarms from the north continued to be received. During the winter of 1936 the Department of Agriculture undertook an experimental campaign of two months' duration against the flying swarms in northern Zululand, with the object of protecting cane-growers further south. By mid-July 225 000 litres (50 000 gallons) of liquid poison, 165 tons of fine powder poison and 190 tons of the mealie meal bait had been used during the 1936 campaign. Unfortunately the campaign had to be abandoned at the end of July, as swarms increased tremendously in size. At the beginning of August a huge swarm, 40 kilometres long and 11 kilometres wide, began moving slowly south towards the sugar lands. (It crossed the White Mfolozi River in early October.) It was noticed that the locusts of these flying swarms ignored the poisoned bait laid for them, preferring to feed on the green cane tops with the result that some of the cane fields were soon without a canopy and had to be cut at once and sent in to the mills. By the beginning of September swarms of locusts were still crossing the Mozambican border and entering Zululand.³⁷

In the fight against these 'foreign' swarms the farmers were handicapped by the government's decision to save money by disbanding the mobile gangs at the end of the hopper season and again in July at the end of the two-month campaign against the flying swarms. With no organization to combat the flying swarms, each farmer had to struggle individually with any swarms that settled on his land. The farmers also had to bear most of the expense involved, receiving only the poison bait or spray free from the government depots. The great threat posed by these large flying swarms was their settling in the cane lands to lay their eggs, so creating another hopper epidemic in the 1937 season.³⁸

During October 1936 there was a renewed wave of locusts from across the Mozambican border and enormous swarms poured into Zululand. By the end of October the locust infestation was as bad as it had been at any other time since the invasion began in 1933. Locust swarms were all over Zululand causing extensive damage to cane fields, wattle plantations and agricultural crops. The canopy of the mature cane had in most cases been completely stripped while the young cane had been eaten to the ground. Locust damage to cane reduced the cane returns of Zululand planters for the 1935/36 season by an estimated 40 % and again by a similar amount for the 1936/37 season.³⁹

Final assault, 1937 season

For the 1937 hopper season 3 000 tons of poison was stockpiled in depots for distribution throughout Zululand. Furthermore a system of spotters was established for the Native Reserves and Crown lands, so that hatchings could be reported immediately to the district locust officers. (George Higgs, a farmer in the Empangeni district, had since 1934 almost single-handed, run the campaign in the Native Reserves.) By the beginning of January 1937 hoppers were hatching out over the whole cane belt of Zululand. The use of the mealie meal poison bait was very successful and by the end of January the campaign was reported to be containing the hoppers, and there was little fear of any damage being done to the cane.⁴⁰

By 31 March 1937 it was possible to disband all the mobile gangs since an almost 100 % success rate against the hoppers was reported. The 1937

campaign was noteworthy for its thoroughness and efficiency and, even though the 1937 infestation was the largest since 1933, as a result of the promptness with which each hatching was dealt, damage to cane was minimal. Unfortunately the Zululand farmers still had to contend with flying swarms which were crossing into Zululand from Mozambique. But the locust fighters slowly got the upper hand over these as well. By the end of 1937 the campaign against locusts had ceased, and in February 1938 only one small swarm of hoppers hatched out in the Kwambonambi area.⁴¹

Conclusion

The 1933–1937 red locust invasion of Zululand was the largest ever recorded in the area, the brunt of which was borne by the cane planters. This invasion caused large-scale damage to mature and young cane and in most cases reduced output by at least 50 %. This was a severe blow to the sugar farmers of Zululand, especially coming as it did so soon after the economic hardships they had experienced during the years 1929–1934. In addition, the black inhabitants of the reserves had been unable to protect their crops and, to try to make ends meet, many of them took employment in the mobile gangs and as spotters.

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- 22 Hammond, *SACGA: 50 years*, p. 97.

- ²³ *Zululand Times*, 28 June 1934.
- ²⁴ *Ibid.*, 6 September 1934; *SASJ*, April 1935, p. 239 and August 1935, p. 471.
- ²⁵ *Zululand Times*, 6 September 1934 and 8 November 1934; *SASJ*, September 1934, pp. 567 and 579.
- ²⁶ *Zululand Times*, 17 January 1935.
- ²⁷ *Ibid.*, 18 July 1935 and 23 August 1935; Hammond, *SACGA: 50 years*, pp. 99 and 101.
- ²⁸ *Zululand Times*, 18 July 1935 and 23 August 1935.
- ²⁹ Hammond, *SACGA: 50 years*, pp. 101–2.
- ³⁰ *Zululand Times*, 29 November 1934, 27 December 1934, 3 January 1935 and 14 March 1935.
- ³¹ *Ibid.*, 4 April 1935, 2 May 1935 and 16 May 1935; Hammond, *SACGA: 50 years*, p. 102; *SASJ*, March 1935, p. 189 and April 1935, p. 195.
- ³² *Zululand Times*, 21 November 1934 and 3 December 1936.
- ³³ *SASJ*, February 1936, p. 71.
- ³⁴ *Zululand Times*, 23 January 1936 and 3 December 1936.
- ³⁵ *Ibid.*, 30 January 1936, 3 December 1936 and 17 December 1936; *SASJ*, December 1935, p. 739.
- ³⁶ *Zululand Times*, 14 May 1936, 28 May 1936 and 18 June 1936; *SASJ*, March 1936, p. 137.
- ³⁷ *Zululand Times*, 6 August 1936 and 3 September 1936; *SASJ*, July 1936, p. 399; November 1936, p. 663 and July 1937, p. 407.
- ³⁸ *Zululand Times*, 10 September 1936 and 8 October 1936.
- ³⁹ *Ibid.*, 17 September 1936 and 29 October 1936; *SASJ*, October 1936, p. 605 and November 1936, p. 663.
- ⁴⁰ *Zululand Times*, 17 December 1936, 7 January 1937, 14 January 1937 and 26 January 1936; Correspondence, Lea-Harrison, 7 June 1969.
- ⁴¹ *Zululand Times*, 29 April 1937; *SASJ*, July 1937, p. 407.

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