

The Colorado Potato Beetle Goes to War

On 17 September 1940, Germany's Surgeon General received a report of an inspection of certain Poudrerie Nationale laboratories in Le Bouchet, France. That report became the basis for a German biological warfare programme — one that would eventually enlist the Colorado potato beetle in the war effort.¹

After the June 1940 fall of France, occupying German forces dispatched a team to inspect the Le Bouchet laboratories. German military intelligence had previously identified four of these laboratories as possibly harbouring some sort of BW research programme. The inspection team included Professor H Kliewe, a former director of Giessen University's Diagnostic Laboratory for Infectious Diseases. Kliewe's inspection revealed what he considered to be evidence of biological warfare preparations. This evidence included microphotographs showing metal fragments surrounded by anthrax organisms; laboratory reports on the simultaneous use of chemical warfare agents and pathogens; and other reports on the behaviour of various pathogens.

Believing there had been close liaison between the French and the British before the fall of France, the Germans concluded that the British considered BW promising. Kliewe would later tell American interrogators "[w]e learned for the first time how promising the enemy considered this field". For the Germans, this conclusion was sufficient to warrant more attention to defensive preparations against a BW attack. As part of these preparations, Kliewe was transferred in January 1941 to the *Heeressanitäts Inspektion* (Surgeon General's Office), Berlin, for the specific purpose of investigating all problems connected with BW. German concerns over French interest in BW were heightened by events in early 1942. That January, 600 German soldiers in France contracted typhoid fever. Several died. The typhoid was traced to contaminated food and drink from the soldiers' club LeBrune in Paris. German authorities suspected typhoid was spread deliberately. Suspicions of sabotage seemed to be confirmed when a French student told German authorities of a plot among University of Paris medical students to contaminate food and drink at restaurants frequented by German soldiers.

Shortly thereafter, records of the Le Bouchet laboratories were uncovered when German forces occupied Lyons, where the records had been taken for safe-keeping. These records gave the Germans a detailed view of the work at Le Bouchet and confirmed German fears that they lagged behind their enemies (which, by this time, included the Soviet Union and the USA) in preparing for biological warfare. Kliewe, as the German

military's focal point for BW information, collected reports of known or suspected BW use, especially — after June 1941 — on the eastern front with the Soviet Union. Additionally, Kliewe and others monitored reports of possible novel developments in BW. One such report came from an agent operating in England. Dated 30 April 1942, the report noted the arrival in England from the USA of a B-24 Liberator aircraft with a cargo of 15,000 Colorado potato beetles plus an unknown number of Texas ticks. In response to this report, the OKH (German Army High Command) asked whether Germany was vulnerable to damage in the event of an invasion of either Colorado potato beetles or Texas ticks. The answer, from Kliewe and the Surgeon General's Office, judged the Texas tick "no great danger". With that, the Texas tick appears to have vanished as a concern of the German military.

Not so the Colorado potato beetle.² The authorities seem to have feared an Allied scheme to use the beetle to reduce Germany's food supplies, thereby weakening her ability to fight and shortening the war. Whatever the reason, orders were given during 1942 to establish a *Kartoffelkäferabwehrdienst* (Potato Beetle Defence Service) complete with a *Kartoffelkäferforschungsinstitut* (Potato Beetle Research Institute) in Kruft.³

The work of these groups quickly shifted from defence against the Colorado potato beetle to its offensive use. The east coast of England, thought to be the site of some 400,000 hectares of potato fields, was deemed a suitable target. It was estimated that some 20–40 million beetles would be needed for full coverage. To meet this need, German resources were diverted in June 1943, to large-scale breeding of the Colorado potato beetle. It was expected that sufficient quantities would be on-hand by summer 1944, to permit beetle attacks to begin.

In preparation for these attacks, field trials were conducted to study dispersal characteristics for air release of the beetles, observing the effects of temperature, winds, and release height. In October 1943, some 40,000 living potato beetles were released over fields near Speyer. The beetles were painted to aid in their recovery. Even so, less than 100 beetles were recovered on the ground. A second trial, with 14,000 living beetles, resulted in a mere 57 beetles being recovered. Additional trials were attempted with inanimate (wooden) beetles, also painted to help locate them. Recoveries were only slightly better.

These results were variously interpreted as indicative of either very effective, large-scale dispersal (i.e., only a few were recovered because the rest had travelled

far away, and that was good) or, conversely, rather ineffective dispersal. It appears no one considered the prospect that Germany might be subjecting herself to a BW attack during such aerial releases.

Without, apparently, much more regard for the results of the Speyer field trials, work with the Colorado potato beetle continued. In June 1944 the German High Command was informed by Kliewe's office that all experiments had been concluded, all preparations completed, and "use [of the Colorado potato beetle] is possible at any time".

There is scant evidence to suggest the Colorado potato beetle ever made it into battle, despite all these preparations. A 1970 news article quoted the prominent British naturalist Richard Ford, who professed first-hand knowledge of various beetle bomb attacks, starting with one in 1943 near Chale, off the English coast on the Isle of Wight. According to Ford, teams of children, pledged to secrecy, were dispatched to sites of suspected beetle attacks. The children aided in rounding up the black and yellow beetles, which were then dropped into boiling water to kill them.⁴ This one article seems not to have prompted an out-pouring of similar stories from others claiming to be veterans of England's war on the Colorado potato beetle.

There is, however, a document suggesting the problem with the Colorado potato beetle in England predated German interest in use of or defence against this very same insect. On 6 December 1941, Britain's Prime Minister Winston Churchill received a memorandum from Lord Hankey, a member of his War Cabinet. Then classified 'Most Secret', the memorandum deals largely with anti-crop and livestock weapons. In it, Hankey writes "I would not trust the Germans, if driven to desperation, not to resort to such methods [as biological warfare]. It is worthy of mention that a few specimens of the Colorado Beetle, which preys on the potato, were found in some half a dozen districts in the region between Weymouth and Swansea a few months ago: although these are not important potato districts and no containers or other suspicious objects were discovered, there were abnormal features in at least one instance suggesting that the occurrence was not due to natural causes".⁵

Hankey concludes by asking for authorization for preparatory measures against such BW attacks. Permission was granted 2 January 1942, which might explain that report on 15,000 Colorado potato beetles being shipped to England in April 1942 — four months after Hankey's memorandum and a year before the Germans initiated large-scale breeding of the beetle. Therefore, it is altogether possible the whole fuss over the Colorado potato beetle stemmed from the presence in England of this beetle (or of some close relative), owing to innocent, non-military circumstances — such as arrival from

the USA in lend-lease or shipments of goods. Having found the Colorado potato beetle and having concluded a threat to Britain if the beetle should go unchecked, British authorities initiated steps to study means of beetle control. Observing them, an already suspicious German military might well have interpreted what they saw as evidence of BW preparations.

The notion of the Colorado potato beetle as an offensive weapon appears to have lived on after the Second World War, however. In June 1950 Paul Mercker, Minister of Agriculture and Forestry in the German Democratic Republic, accused the USA of discharging Colorado potato beetles from airplanes flying over East Germany. No proof was offered, and US authorities dismissed Mercker's accusations as propaganda.

Notes

1. This article is based largely on a US military intelligence assessment prepared as part of the ALSOS mission into Germany and western Europe: J M Barnes, W J Cromartie, C Henze, and J W Hofer. "A review of German activities in the field of Biological Warfare", report no B-C-H-H/305, 12 September 1945, 133 pp. Originally classified 'secret', the report was declassified on 17 July 1992 and is available through the US National Archives. The author is indebted to Gordon Burck for calling attention to the availability of this report. Unless noted otherwise, all information is taken from the Barnes *et al* report.
2. Colorado potato beetle is the common name for *Leptinotarsa decemlineata*. Other names include potato bug, potato weevil, and Colorado beetle. Identified in the early 19th century, the Colorado potato beetle is thought to have originated in Mexico, where it thrived on the native plant 'buffalo bur'. It appeared in its namesake Colorado and elsewhere in the American Midwest as potatoes were introduced. It invaded the Soviet Union during the Cold War, most likely unintentionally.
3. According to one source [R Harris and J Paxman, *A higher form of killing*, New York: Hill and Wang, 1982, p 99], German concerns over the potato beetle were sufficiently great that Gerhard Schrader, discoverer of the first nerve gas, Tabun (GA) and inventor of a second, Sarin (GB), was pulled off his nerve gas work in Fall 1944 and ordered to find an insecticide to save the potato crop. If true, this information suggests another factor in Germany's failure to use nerve gas in the Second World War — the scientific resources had been diverted onto other, wartime tasks. However, the source provides no reference to back up its claim regarding Schrader, and no corroborating information has been found.
4. AP from Yarmouth as in *International Herald Tribune* 25 Feb 70, p 5, "When the Nazis tried to starve out Britain by beetle-bombing crops".
5. UK Public Record Office, file CAB 120/782.

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