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► To cite this version:

Paul Weindling. The scientist as survivor: Ludwik Fleck and the Holocaust. *La Lettre de la Maison Française d'Oxford*, 2001, 13, pp.85-96. hal-02538351

HAL Id: hal-02538351

<https://hal.science/hal-02538351>

Submitted on 20 Apr 2020

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THE SCIENTIST AS SURVIVOR : LUDWIK FLECK AND THE HOLOCAUST.

Paul Weindling¹

Ludwik Fleck's understanding of the practice of bacteriological and immunological research meant that he was both an accomplished scientist, while having a highly critical insight into scientific thought and practice. These characteristics contributed to the survival of himself and of his family in the Holocaust. He survived the ghetto of Lwow/ Lemberg, and the concentration camps of Auschwitz and Buchenwald. Fleck's activities in typhus research, and his post-war testimonies and those of other Holocaust survivors provide some important clues to his own experiences.

The Nazi stress on the racial character of leading individuals was in striking contrast to the sociology of science as pioneered by Fleck, who emphasised thought-collectives of collaborating groups. Fleck's study of the sociology of a scientific fact of 1935 focused on Behring's Jewish contemporaries, Paul Ehrlich and August von Wassermann, and their relations to the Prussian state. It has been suggested that 'In Germany the Nazis could have no interest in the Polish Jew Fleck'. Yet as a German-language work published in Basle in 1935 (and abstracted in the *Klinische Wochenschrift*), Fleck's work received a substantial number of reviews in Germany, and was acquired by German medical libraries. One reviewer pointed out that Fleck's term *Denkkollektiv* was derived from the Soviet concept of a collective, and inferred that science was a materialist product, whereas the appropriate German term *Gemeinschaft* had fitting psychological and philosophical dimensions.²

The conceptual parallels are striking between the collectivist ideas of

¹ Wellcome Trust Research Professor in the History of Medicine. Oxford Brookes University.

² PETERSEN, Hans, 'Ludwik Flecks Lehre vom Denkstil und dem Denkkollektiv', *Klinische Wochenschrift*, vol. 15 (1936) 239-42. Favourable reviews include: M.H.B. in *Natur und Geist. Monatshefte für Wissenschaft, Weltanschauung und Lebensgestaltung*, vol. 5 (1937) 380-1. CASPARI, W., in *Die Umschau*, vol. 40 (1936) 338.

Fleck and the Gestalt approach to the history of bacteriology. Fleck's concept of an epistemic community was more sociological when compared to the historicist and hero-worshipping Zeiss. Yet both approaches drew attention to non-rational factors in Buchenwald was a cruel irony, as Buchenwald came under an SS bacteriologist, Joachim Mrugowsky, who had pronounced historical interests as well as favouring holism, - although Fleck was contemptuous of Mrugowsky's brutal experiments.³

Fleck's fate became entangled with German typhus research. In his home city of Lwow he had been under pressure from Polish antisemites, and so sought recognition by publishing in German. The professor of bacteriology Rudolf Weigl was Fleck's former teacher, and himself noted for his researches into typhus vaccines. After Weigl's departure from Lwow to Cracow in 1939, the Soviet authorities appointed Fleck as Director of the bacteriological laboratory in the Lwow medical school.⁴ Under Soviet occupation the renamed "Iwan Franko" University of Lwow became linked to Ukrainian academic institutions. The Pasteur Institute in Lwow was oriented to the Metchnikov Institute at Kharkow - so named because the immunologist and co-worker of Pasteur, Elias Metchnikov had studied there.⁵

We know little about Fleck's period as Institute Director. German bacteriologists contacted typhus researchers in the Soviet zone of Poland to obtain vaccine until their own production was ready. In the winter of 1939-40 the Lwow authorities exchanged 5000 doses of Weigl vaccine for five German microscopes. Was the exchange organised by Weigl, or by Ludwik Fleck who had been appointed director of the bacteriological institute in Lwow, as a member of a newly formed Ukrainian Medical Institute? The exchange, proudly reported by Reichsgesundheitsführer Leonardo Conti to Himmler, was prompted by the need to ensure that the resettlement programme of ethnic Germans from the East did not result in the importation of typhus; that Gerhard Rose of the Robert Koch Institute took a key role in supervising the ethnic German repatriation, shows how bacteriologists were

³Yad Vashem Archives (hereafter YVA) Fleck testimony .

⁴FLECK, L., *Entstehung und Entwicklung einer wissenschaftlichen Tatsache. Einführung in die Lehre vom Denkstil und Denkkollektiv* (Basle, 1935), new edn (Frankfurt, 1980), transl. as *Genesis and Development of a Scientific Fact* (Chicago, 1979), see p. 191 for early reviews. SCHNELLE, T., *Ludwik Fleck - Leben und Denken* (Freiburg, 1982). COHEN, R.S. and SCHNELLE, T. (eds), *Cognition and Fact. Materials on Ludwik Fleck* (Boston, 1986), p. 13 for quotation on Fleck and Nazism.

⁵For background to typhus research in general and at Lwow in particular see WEINDLING, Paul, *Epidemics and Genocide in Eastern Europe* (Oxford, 2000).

involved in schemes for racial resettlement.⁶

Fleck's life was in peril once the Germans occupied Lwow in mid-1941. In an autobiographical account in Yad Vashem, Fleck described his experiences of the ghetto where the sanitary conditions were atrocious: once the ghetto was moved to a small area on the fringes of the city, Ludwik Fleck reckoned that 70% of the population became ill with typhus. By now in charge of a laboratory in the Jewish hospital, Fleck demonstrated a very different ethic to that of the SS in first vaccinating himself and his relatives with an experimental vaccine, and then a group of 32 volunteers. Fleck and his medical colleagues Eduard Elster, Bernhard Umschweif, Jacob Seeman and Owsiej Abramowicz developed a diagnostic test and vaccine for typhus, based on human urine from patients who had contracted typhus as a source of rickettsial antigen. They vaccinated 500 persons in the Lemberg ghetto; the few who survived testified that the vaccine successfully reduced the severity of the disease.

Striking features of Fleck-Elster urine vaccine were the adherence to normal scientific procedures in sheer defiance of the atrocious circumstances, and the success in rapidly up-scaling from the laboratory to industrial manufacture. The discovery was announced to a meeting of Lemberg doctors on 27 May 1942, and communicated to the distinguished serologist Ludwik Hirszfeld in the Warsaw ghetto. The patent for the new vaccine was offered to a German, Dr Schwanenberger, in return for production facilities and raw materials like chloroform. The ordeal of explaining the project to the Gestapo resulted in specimens being provided for Richard Otto in Frankfurt. The Germans installed Fleck in a factory with nine Jewish assistants. Fleck and his colleagues realised that the larger the production group, the more lives might be saved as factory workers had a protected position. Fleck used the opportunity to employ his son and wife as lab technicians. Moreover, the scheme meant that convalescents from typhus were also protected as large amounts of urine were needed. Fleck cunningly persuaded the Germans that Jews' urine should be used for the ghetto vaccine.⁷

The urine was collected in sterile flasks of fifty liters, to which chloroform was added. After dialysis, the aim was to precipitate the urine and extract the antigen. One batch - "K14" - produced an especially powerful

⁶ National Archives Washington DC (hereafter NAW) microfilm publication 175 roll 69 report by Rose. BA NS 19/ 1591 Bl. 3 L. Conti to Himmler 14.VIII.42.

⁷ YVA P10/52 Fleck to Dvoretzky 13.XII.58; FLECK, *Badania nad tyfusam palmistym*

antigen, and this was then used for clinical trials. Large scale production followed, and the vaccine was used in main Lwow ghetto, and then the small Janowska street camp. Lists of those vaccinated were carefully compiled. But the brutal liquidation of these meant that Fleck was unable to gauge the overall efficacy of the new vaccine.⁸

Fleck's vaccine plant in the ghetto should be seen in relation to other German vaccine production plants at Lemberg. Weigl (Fleck's former professor) supervised the initial arrangements and staff training in addition to co-directing a military vaccine institute at Lemberg.⁹ The new Behring Institute in Lemberg drew on Weigl's expertise and contacts to secure Polish staff, and to organise vaccine production.¹⁰

The official opening by Generalgouverneur Hans Frank of what was variously known as the *Behring-Institut G.m.b.H Lemberg* or *Fleckfieberforschungs-Institut Lemberg* on 10 December 1942 was an opportunity to inject a dose of Germanic ideology into vaccine production. The NSDAP and SS medical administrators joined with vaccine researchers to admire this new "German Defensive Wall against Epidemics", which as Kurt Blome (the Deputy Physicians' Führer) proclaimed, would defend Western civilisation against Eastern barbarism. The German bacteriologists Kudicke and Wohlrab were decorated for their achievements in vaccine production in Warsaw, and Lemberg was characterised as a miniature Vienna where German medical science was to be revitalised (ignoring the distinguished role of Lemberg as a medical centre until 1941).¹¹

The work in the Lemberg ghetto brought Fleck to the attention of the German bacteriological establishment. Fleck demonstrated his vaccine to

⁸ YVA P10/52 Fleck to Dvoretzky 13.XII.58; FLECK, *Badania nad tyfusam palmistym w getcie lwowskim w latach 1941-1942*.

⁹ Berlin Document Center (now Bundesarchiv Berlin and NAW) BDC SS-HO 2036 protocol of RMdI meeting of 23.XII.41, dated 4.I.42. Behring-Archiv, Zeugnis Dr Richard Haas, 31.V.49. Lemberg pink file, *Besprechung Neumann und Buurman* 19.II.42.

¹⁰ Behring Archive, Marburg, Lemberg green file, Haas and Golz to Weigl 10.IX.42, Weigl to Behring Institut Lemberg 18.IX.42.

¹¹ Behring-Archiv, Lemberg red file, 'Deutsche Kulturtat im Osten. Fleckfieber-Forschungsinstitut in Lemberg eröffnet', *Völkischer Beobachter München* (11 .XII.42) typifies the reports in numerous national and local papers. Ironically, the celebratory brochure to mark the opening was only ready when the Institute was evacuated, Bayer-Archiv Leverkusen, 169/17 *Besprechung in Marburg am 18. und 19.8.44*. See also 6/14 Behring-Werke, *Eröffnung der Fleckfieberforschungsstätte Lemberg am 10.und 11. Dezember 1942*. BAK R 86/ 5143 Bl 165-6 'Fleckfieber-Schutzimpfung. Eine Grosstat deutscher Forschung'.

Kudicke, the bacteriological commandant of the Warsaw Hygiene Institute. A German bacteriologist was drafted in from Berlin to oversee the production process, but he turned out to be not very competent.¹² Fleck - described by Hautval as "*homme silencieux, lucide*" - was deported with his medical colleagues from the "Weigl Institute" in Lemberg to Auschwitz in February 1943 where he survived, despite contracting typhus and pleurisy after violence from an SS guard. His medical skills having been brought to the attention of the SS, he conducted routine serological tests (for which he had immense skill and insight) diagnosing illnesses like syphilis and typhus in the "Hygiene Institute of the Waffen-SS and Police", opened in April 1943. His wife, Ernestina Fleck, along with Nusia Umschweif and Anna Seeman worked as laboratory assistants; the families of Fleck, Seeman and Umschweif were moved with their children to Block 10, an experimental block in Auschwitz used by the Hygiene Institute. "The Polish bacteriologists" were an unusual feature of this block of human guinea pigs, prisoner nurses and vivisectors.¹³ Despite this unusually fortuitous arrangement, Fleck remained deeply pessimistic: he was convinced that they would all end as smoke from the cremation ovens in the form of their initials.¹⁴ Ludwik Fleck observed corpses as these were used by SS medical researchers for bacterial cultures: their twisted state suggested that the victims suffered great pain which he attributed to excessively weak doses of the gas.¹⁵

The Auschwitz Hygiene Institute used bacteriological equipment looted from Cracow University, and its prisoner-scientists were shocked by the SS substituting human flesh for that of animals for bacterial cultures. The Institute had a staff of biologists, bacteriologists and pathologists assembled

¹² YVA P10/52 Fleck to Dvoretzky 13.XII.58; FLECK, 'Badania nad tyfusam palmistym w getcie lwowskim w latach 1941-1942'. Fella Rosengarten-Singer testimony. HACKETT, *Buchenwald Report*, pp. 357-61. J. SCHOENFELD, *Jews in the Lwów Ghetto, the Janowski Concentration Camp, and as Deportees in Siberia* (Hoboken, 1985), p. 72. Kordas and Weindling, 'Working Conditions'.

¹³ YVA 033/17, 0/650 (3.II.58) testimonies of Ludwik Fleck. 033/2250 A. Hautval to B. Klibanski 8.XII.87. SCHNELLE, T. 'Microbiology and Philosophy of Science, Lwow and the German Holocaust: Stations of a Life - Ludwik Fleck 1896-1961', COHEN, R.S. and SCHNELLE, T. (eds), *Cognition and Fact. Materials on Ludwik Fleck* (Dordrecht, 1986), pp. 20-23. FLECK, L. 'Kilka spostrzezen i doswiadczen z dziedziny duru plamistego', *Polski Tygodnik Lekarski*, vol. 1 (1946) 307-9. For the capture of Lwow see Dallin, pp. 119-22. Shelley, *Criminal Experiments*, pp. 8, 57-8, 69, 182. CZECH, D., *Auschwitz Chronicle. 1939-1945* (London, 1990), pp. 325, 328.

¹⁴ YVA 033/2250 A. Hautval to B. Klibanski 8.XII.87, and p. 64

¹⁵ YVA 033/ 17, p. 3.

from the prisoners. There were two historians of biology, Fleck and Marc Klein the Strasburg pathologist. There were other university professors and medical practitioners from France, the Netherlands, Austria and Greece.¹⁶ They were an international grouping very similar to the Buchenwald prisoner scientists. They carried out tests and provided services, while supporting the camp resistance. Postwar testimonies show the contempt in which the prisoner researchers held their German masters: Léon Landau characterised the controversial Hans Münch as a nonentity in bacteriology who was compelled to undertake experiments, but blessed him for the endless supply of rabbits.¹⁷

There was an incalculable amount of sabotage and illicit manufacture and use of vaccines. Batches of vaccine from Eyer's Institute were contaminated in various ways, but checking often removed the impurities. Secret vaccine production was organised at the State Institute for Hygiene by the Polish resistance. By means of various acts of subterfuge like double registration of batches, some was siphoned off by the Eyer's Polish staff. Even if the quantities were small and the efficacy of the vaccine difficult to assess, the symbolism of such acts of medical resistance was significant.¹⁸ The ghetto health services had to manufacture their own vaccines (as achieved by Fleck at Lemberg), diagnostic tests (as devised by Hirszfeld in the Warsaw ghetto combining typhus serum and urine), and medicines (as successfully managed for vitamin preparations at the Vilna ghetto), or obtain these by bribery and smuggling. If the Germans offered drugs and vaccines to a ghetto, these were tested on dogs in case they were poisoned.¹⁹ Eyer sent some units of vaccine to Hirszfeld in the Warsaw ghetto, and Weigl conducted trials in which 8000 civilians were vaccinated.²⁰ But such direct acts of assistance (in this case tempered with the need to carry out a clinical trial) were rare.

Joachim Mrugowsky insisted on the autonomy of the Raisko Hygiene Institute and on the employment of Jewish medical staff - the prisoners were in a good position to provide false results in the hope that these

¹⁶ ROMNEY, C., 'Les témoignages écrits des médecins déportés à Auschwitz', A. Goldschläger and J. Lemaire (eds) *La Shoah: Témoignage Impossible?* (Brussels, 1998), pp. 95-111 (= *La Pensée et les Hommes*, vol. 39)

¹⁷ PRO WO 309/468 German medical experiments, Landau deposition of 27 August 1946. LANDAU, L. and TRUCK, R.P., *Réquisitoire* (Paris, 1946).

¹⁸ BARBARSKI, K., 'Sabotaz w Ampulce', *Przekroj*, no. 99 (1947)

¹⁹ FLECK, L., 'Specific Antigenic Substances in the Urine of Typhus Patients', *Texas*

²⁰ ROLAND, *Courage*, p. 146.

might save lives. The Raisko Institute grew rapidly, acquiring over 100 workers in rivalry with the brutal Clauberg in the main camp. For many years Hans Münch, an SS physician and NSDAP member since 1937, obstinately presented himself as a physician who used his position to save lives. But recently Münch has described how he fought epidemics by sealing huts and gassing those inside, taking part in selections for the gas chambers, and being involved in lethal experiments as well as inhumane practises. He was involved in malaria experiments, and injected prisoners with streptococci. But he saved his conscience, and when it came to being placed on trial after the war, his skin, by having obtained Himmler's permission to carry out experiments in Block 10. These were protracted but benign experiments on skin allergies as a possible cause of rheumatism. The experiments involved benign injections and entitled the human guinea pigs to extra rations. Münch claimed that they saved the life of Ernestina Fleck, among the lives of many others.²¹ It looks as though Münch devised a cunning survival strategy for himself.

The French internee Claudette Bloch staged - with appropriate irony given the extent of duplicity and sabotage - a production of Molière's *Malade Imaginaire* at a New Year's celebration.²² Even when Auschwitz was dissolved, the laboratory and its prisoner staff were evacuated to Dachau: the Dutch prisoner-technician reflected on the relative luxury, "It was unreal, like a dream. I lived in a neat and tidy enclave, surrounded by horror. Only a hundred feet away people were starving and dying of typhus."²³

The Polish prisoner bacteriologists owed their salvation to the separate status of the hygiene laboratories. The bacteriologist and director of the Auschwitz Hygiene Institute Bruno Weber approved Fleck's transfer in December 1943 to the Hygiene Institute of the Waffen SS in Buchenwald - Mrugowsky's Berlin Hygiene Institute was responsible for both the Buchenwald and Auschwitz Hygiene Institutes. Fleck was eventually able to secure the transfer of his son, Ryszard Arie, to Buchenwald, and Ernestina

²¹ SCHIRRA, B., *Der Spiegel*, (28.IX.1998). 'A Nazi who has No Regrets', *The Guardian*, *The Editor*, (24.X.1998), 12-13. For a laudatory view of Münch see SERENY, G., *Albert Speer. His Battle with Truth* (London, 1996), pp. 465-8.

²² NAW microfilm 1019 Mrugowsky interrogation. Lifton, *Nazi Doctors*, pp. 303-36. Shelley, *Criminal Experiments*, pp. 31 (for the children of other prisoner-scientists), 265 and 296 (for Weber and Fleck), 281-316 (recollections of Dr Hans Münch). Interviews with Claudette Bloch Kennedy, Oxford, March and May 1997. YVA copy of BDC file on Hans Münch.

²³ MICHEELS, L., *Doctor #117641* (New Haven, 1989), p. 140.

Fleck survived Auschwitz.²⁴ Although Mrugowsky planned to produce an equivalent of the Pasteur Institute's Durand-Giroud vaccine at Buchenwald in the autumn of 1942, he relied on Ding's much overrated medical skills. Ding gathered together a group of prisoner bacteriologists, so that vaccine production finally began during August 1943 in block 50.²⁵ Vaccines were meant to be produced using the method of the Pasteur Institute, but Ding was at the mercy of his prisoners who made much show of their scientific expertise while pursuing an agenda of survival and resistance.²⁶

The Buchenwald research station was somewhat detached from the deprivations, beatings and executions in the camp.²⁷ The importance attached to the production of typhus vaccines meant that prisoners working on vaccine production were given special privileges in a camp with conditions otherwise described by the French medical scientist Charles Richet as an overcrowded rabbit coop.²⁸ Prisoner-researchers were exempted from the normal shaved head, and they could receive Red Cross parcels and correspondence; Kogon learned biology and immunology from a substantial scientific library supplied by the University of Jena; the Dutch prisoner Jan Robert was sent to Jena to consult the university library, and prisoners had access to a camp literary library. Balachowsky recorded that on 11 January 1945 he worked on "bibliography and writing about lice and fleas". He compiled obsessive lists: the books he read - ranging from works by Proust and H.G. Wells to Michelet's *Le Moyen Age*, the letters and parcels received, medical notes, tables of arthropods transmitting rickettsiae and on his work to develop "the Lice Laboratory" from January 1945, when comrades visited, and when they were executed or otherwise died. Among the benefits of Block 50 was that prisoners secretly used the centrifuge to mash the remains of dead laboratory

²⁴ Personal communication Hans Münch to the author 25.VII.97 (actually 27.V.97) concerning Fleck. YVA, testimony of Arye Fleck. KLEE, *Auschwitz*, pp. 314-5 wrongly suggests that Fleck was at Buchenwald in August 1943.

²⁵ On the origins of the experimental station see ZIMMERMANN, S., '*Behrührungspunkte zwischen dem Konzentrationslager Buchenwald und der Medizinischen Fakultät der Universität Jena*', Meinel and Voswinckel, *Medizin*, pp. 54-61. On Erwin Ding(-Schuler) see POLLER, W., *Medical Block Buchenwald* (London, 1988), pp. 90, 99-106, 126, 130-6, 169-71, 177, 179, 182, 185-90, 193, 222-4, 226-30. On typhus disinfection pp. 236-7. On typhus experiments at Buchenwald see ROUSSET, J., *Chez les Barbares* (Lyon, 1946).

²⁶ BAK R 86/ 4153 Bl. 53 Haubold report 11.XII.42. NAW microfilm 1019/ Mrugowsky interrogation 3.XII.46 am, p. 12.

²⁷ ROUSSET, J., *Chez les Barbares* (1946), p. 15. RICHET, C., *Trois bagnes* (Paris, 1945). RICHET, 'La médecine au Bagne (Buchenwald, janvier 1944)', *La presse médicale* (14.VII.1945) 389.

²⁸ RICHET, 'Experiences', pp. 453-4. Richet worked at the *Krankenrevier*

rabbits, and cooked these in a soup. The Germans, fearful of typhus, did not rigorously check the disposal of dead laboratory animals.²⁹

Scientific innovation was not to be held back by humane considerations. Any new observation, for example concerning serological reactions, would prompt Ding to organise a new series of murderous experiments. Balachowsky noted that the research team resisted Ding's demands for such information.³⁰ That Ludwik Fleck came to work (albeit indirectly) under Mrugowsky was ironic given that both had historical and philosophical interests in holistic ideas. Fleck owed his survival to his skills as a microbiologist and serologist. He was not only experienced in discerning microbiological phenomena, but he also found examples of thought-collectives among his co-workers, as they mis-identified typhus rickettsiae. Ding worked with two subordinate SS officers, otherwise the vaccine team consisted of prisoners.³¹ The brutal Kapo Arthur Dietzsch supervised a medical team of fifty-nine prisoners, many being veterans in resistance. The Buchenwald captives produced about thirty to fifty liters of vaccine each month from late in 1943. In the privileged scientific enclave of block 50, this large group was a remarkable example of an international and interdisciplinary research team.³² It was directed by a Polish bacteriologist Marian Ciepielowsky, whom Ding had saved from execution in Block 46; but far from being compliant Ciepielowsky organised clandestine resistance to limit the executions, falsify results and sabotage vaccine production. Balachowsky's register of the Buchenwald vaccine researchers shows that Germans and Russians were the largest contingents among the 59 convicts.³³

Fleck's paper "Problems of the Science of Science" published in

²⁹ Archives Institut Pasteur (hereafter AIP), Fonds Balachowsky, Ausweis, dated 15.VI.44 providing exemption from hair.

³⁰ AIP Fonds Balachowsky, 'Deposition au sujet des experiences et recherches faites sur le typhus exanthematique au camp de Buchenwald', p. 12. NMT roll 16 frame 916. WAITZ, R. and CIEPELOWSKI, M. in: *La Presse Médicale* (1946). SCHNELLE, 'Microbiology and Philosophy of Science', pp. 23-9. NAW microfilm 1019/ Mrugowsky interrogation

17.X.46, p. 6. In July 1944 Fleck reported a modification in the vaccine, and Balachowsky maintained that Ding initiated a series of experiments resulting in twenty deaths - Fleck strenuously rejected this accusation.

³¹ NAW microfilm 1019 Mrugowsky interrogation 17.X.46, p. 3.

³² NAW RG 153 War Crimes Case Number 12-390 The Buchenwald Case, microfilm (copy in Gedenkstätte Buchenwald archives Sign 503-8), Ding-Schuler interrogation June 1945.

³³ WEINDLING, *Epidemics and Genocide*, 370-2 for the complete list.

1946 raises the problem that scientists "are unable to distinguish their own dreams about science from the true form of science". The paper depicts Fleck's "observations" of eight prisoner researchers

The group was under orders to manufacture the rabbit lung vaccine according to Giroud's methods. They retained about 60 litres of effective vaccine for use among prisoners while supplying the SS with ineffective batches - Balachowsky commented, "I realised the almost complete inefficiency of the SS doctors, and how easy it was to sabotage the vaccine for the German army".³⁴ As the military situation deteriorated, the vaccine producing stations in Poland had to be evacuated. In order to make up supplies the Buchenwald station was to produce Weigl's louse vaccine, which required louse feeders.³⁵

Balachowsky gave a vivid description of experimental "research" in Buchenwald from May 1944 until April 1945, and later testified at the International Military Tribunal, Nuremberg. Deported to Buchenwald in January 1944, he nearly died in a slave labour battalion building rocket launching sites. After friends made known his scientific pedigree to Ding, Balachowsky was transferred to the medical research block where he saved the lives of SOE prisoners and undermined the Nazi vaccine production.³⁶ On the one hand, here was a rapacious SS enterprise: Balachowsky testified that the research was continually directed by the Supreme Command of the Waffen-SS.³⁷ Mrugowsky was recorded as having visited the extermination block 61 as late as 20 March 1945.³⁸ But on the other hand, this was a medical research establishment exploiting the scientific expertise and resources of the conquered. Ding was keen to have someone from the Pasteur Institute to reinforce the prisoner-researcher contingent. Balachowsky requested that Tréfouel as Director of the Pasteur Institute send to Buchenwald scientific publications about Giroud's vaccine.³⁹ The formal exchange of letters between

³⁴ Trials of the Major German War Criminals, vol. 5, p. 257. BAYLE, F., *Croix gamée contre caducée. Les expériences humaines en Allemagne pendant la deuxième guerre mondiale* (Neustadt: Imprimerie Nationale, 1950), pp. 1177-9, 1227-9 for Mrugowsky's belief in the efficacy of the vaccine. NAW RG 153 Buchenwald Case, Ciepielowsky testimony, frames 1230-1. K. BARBARSKI, 'Sabotaz w Ampulce', *Przekroj*, no. 99 (1947) p. 16.

³⁵ AIP, Balachowsky papers, diary entry of 3.II.45

³⁶ *Alfred-Serge Balachowsky. Titres et Travaux Scientifiques (1925-1967)* (Paris, 1967). M.R.D. Foot, *SOE in France* (London, 1966), pp. 257, 317, 337, 426-7. AIP Fonds Balachowsky for biographical articles and Carnet de Buchenwald.

³⁷ Trials of the Major German War Criminals, vol. 5, pp. 248-61.

³⁸ AIP, Balachowsky papers, note on leaf inserted in notebook gives 22.II.45. NDT roll 16 frame 910 gives a March date.

³⁹ AIP, Balachowsky papers, Buchenwald notebook, list of correspondence, entry of

two Pastorians under conditions of immense strain indicates how the SS was concerned to harness effective, "normal" science to serve exterminatory ends.

Tensions between Balachowsky and Fleck culminated in the accusation that Fleck brought scientific anomalies to the attention of the Germans and that to resolve these the Germans ran a set of human experiments. In 1945 Fleck's name appeared on an Allied list of war criminals. Fleck vehemently denied the accusation, and wrote a memoir to settle the matter. This document was consulted by Fleck's biographer Thomas Schnelle but this document is currently missing.⁴⁰

In mid-1946 Fleck's name appeared in a number of depositions collected by British investigators with French assistance concerning the Raisko laboratory at Auschwitz and the criminality of Weber (in British custody) and Clauberg (believed to be in the Soviet zone).⁴¹ The information was passed to the Americans in the autumn of 1946. Fleck's name was included in a list of possible witnesses willing to testify against Mengele as follows:

lista polakow

"Laboratorium Raisko" KL Raisko" KL Auschwitz

1. 1982 Wlodarski, nicet franciszek stud med
2. 2698 Wojtan, Wincenty – stud
3. 3385 Jakubski, Anton –Prof biologii Poznan, Krakow
4. 9479 Wierusz Witold stud
5. 16272 Krzyzanowski Boleslaw – stud
6. 16840 Mroczkowski, Zbigniew – stud
7. 37302 Reyman, Jan – Dr chemii/ Krakow
8. 59590 Kieta, Mieczyslaw – stud med./ Krakau
9. 62378 Makowski, Janusz – Dr med
10. 76052 Ordega, Jerzy – stud
11. 11 79053 Slebodzinski, Wladylaw – Prof matematyki/ W-wa
12. X100 967 Fleck, Ludwik – Dr med Lwow
13. 127745 Fabicki, Jan – Aptekarz/ W-wa
14. 128 153 Maslanko Maurycy Adwokat/ W-wa

22.V.44. Fonds Direction, Balachowsky to Tréfouel 5.V.44; Tréfouel to Balachowsky

11.V.44.

⁴⁰ I wish to thank Ilana Lowy (CERMES, Paris) for her efforts to view this document in Warsaw.

⁴¹ Public Record Office, Kew (hereafter PRO) WO 309/472 Deposition Marc Klein, Strasbourg, 21 juillet 1946 for Umschweif. Other documents in this file include Fleck.

15. 161952 Mikołajczyk, Feliks – nauczyciel muzyki, Poznań
16. 172295 Meisel, Henryk Dr med Kraków...
17. Szudrowicz Wacław – urzędnik Poznań
18. X 26210 Lawkawica Włodzimierz – Dr med. W-wa

This document was collected by the French medical observer at Nuremberg, François Bayle, and is now in the Archives de France.⁴²

An affidavit by Fleck on the Buchenwald experiments was used by the United States prosecution at the Nuremberg Medical Trial on 7 January 1947. On 8 January Eugen Kogon, a key prosecution witness and author of *Der SS-Staat*, testified about the experimental production of vaccine – “When Dr Ludwig Fleck came to Block 50 at Buchenwald, he said in his capacity as a strict scientist...these were not rickettsia...” “Dr Fleck kept that secret”.⁴³

Fleck encountered some of the most terrifying episodes of the Holocaust. Once Fleck established his scientific credentials, he was able to ensure the survival of his wife and son. This raises some fundamental issues about the special status of scientists in the Holocaust. While Fleck’s survival can be illuminated through the literature on Holocaust survival, it is ultimately as a medical scientist that his survival has to be understood.

⁴² Archives de France BB/35/260. British war crimes investigators held a list of 31 prisoner scientists which included the Fleck family, see PRO WO 309/472 Marian Kujawski statement 18 July 1946.

⁴³ 16th Trial Day, 8 January 1947 Kogon cross examination, in: *The Nuremberg Medical Trial 1946/47. Transcripts, Material of the Prosecution and Defense. Related Documents. English Edition, On Behalf of the Stiftung für Sozialgeschichte des 20. Jahrhunderts Edited By Klaus Dörner, Angelika Ebbinghaus and Karsten Linne, in cooperation with Karlheinz Roth and Paul Weindling. Microfiche Edition, Munich: Saur 1999, fiche 1314.*