THE NAZI WAR ON CANCER

ROBERT N. PROCTOR

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For Stephen Jay Gould, Richard Lewontin,
Ruth Hubbard, Richard Levins,
and the rest of the Bio 106 gang.

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PROLOGUE

At 3:30 A.M. on the morning of June 22, 1941, German armed forces invaded the Soviet Union along a two-thousand-mile front, beginning the largest and deadliest military campaign in history. Within a matter of weeks, more than a million Soviet men, women, and children would be killed. The campaign would eventually stall, Napoleon-like, in the bitter winter outside Stalingrad, but not before many millions more had died.

Hitler had been rather jittery in the weeks leading up to operation *Barbarossa*. In his diary entry for the morning of the invasion, Joseph Goebbels, the Third Reich's minister of popular enlightenment and propaganda, wrote that only after the invasion had begun would the Führer again become calm, as if a burden had been lifted from his shoulders. Goebbels was very close to Hitler, delighting in the precious hours he spent "eye to eye" with the man he called "a genius" and "the greatest commander of all time." The propaganda minister stayed up late with his beloved Führer that predawn morning, pacing back and forth for hours in the huge salon of the Reichskanzlei.

What did these two men talk about, only hours before the beginning of the operation designed to reduce Slavs to slaves and to acquire *Lebensraum* for Germans in the depopulated East? Goebbels's diary reveals that the two men worked on Hitler's speech announcing the invasion and debated also the precise timing of its broadcast (final decision: 5:30 A.M. that morning). Both lamented the treachery of Rudolf Hess, the Führer's former deputy and successor, who only weeks before had parachuted into England to try to bargain a separate peace with Churchill. Both men marveled at the historic magnitude of the imminent invasion, the explosive surge that would redraw the map of Europe and extirpate the "cancerous tumor" of communism.[1]

But Hitler and Goebbels discussed other things that night. They discussed the importance of English pacifism for the Nazi cause, and the political situation in Italy. And shortly before they separated—only an hour before the invasion—they discussed recent advances in cancer research, including the work of a certain Hans Auler, professor of medicine in Berlin and one of several up-and-coming stars of German cancer research. We don't know exactly what was said (the trail is strong enough to allow some plausible inferences), but the fact that cancer was even broached seems puzzling. How did Germany's political leaders find the time—hours before a major invasion—to discuss cancer and cancer research? Was this idle chitchat, designed to ease the tension, or was there something more at stake? What was cancer in the Thousand Year Reich that set it apart from other health obsessions of the hour?

THIS is a book about fascism, and a book about science. We think we know a lot about both topics, and many of the most horrific images are surely familiar: bodies being bulldozed into pits, gold being stolen from human teeth and buried in Swiss vaults, human hair bundled for recycling, scattered ashes, shattered families. The twisted science of the time is no less notorious: the horrific experiments in the camps; the Luftwaffe killing dozens of men by subjecting them to icy cold or very low pressure; SS doctors like Josef Mengele in Auschwitz injecting dyes into living eyes to see whether brown eyes could be changed into blue.

How many of us know, though, that Dachau prisoners produced organic honey, or that Nazi health activists launched the world's most powerful antismoking campaign? How many of us know that the Nazi war on cancer was the most aggressive in the world, encompassing restrictions on the use of asbestos, bans on tobacco, and bans on carcinogenic pesticides and food dyes? How many of us know that soybeans were declared "Nazi beans," or that Nazi bakeries were required by law to produce whole-grain bread?

This is a book about the history of medicine, but it is also about body politics: Nazi body politics, concepts of health and disease

that flourished in the Nazi era, Nazi plots to fight disease. It is about conceptions of health, but it is also about health itself, including who suffered and how much, and why. It addresses the *complicity* of science under fascism but also the *complexity* of science within fascism. It is about how fascism suppressed certain kinds of science—by expelling Jews and communists, for example—but it is also about how fascist ideals fostered research directions and lifestyle fashions that look strikingly like those we today might embrace.

Books about Nazism are almost always designed to shock or disturb; the brute facts lend themselves to this treatment. The distress I would like to evoke, however, is different from that of most recent histories of Nazi medicine, or the Holocaust more generally. There is a by-now-conventional narrative of sorts that treats medicine of the era as an unfolding monstrosity—from racial hygiene, sterilization, and racial exclusion to euthanasia, abusive experimentation, and the Final Solution. The participation of doctors in Nazi racial crimes is disturbing, but it is equally disturbing that Nazi doctors and public health activists were also involved in work that we, today, might regard as "progressive" or even socially responsible—and that some of that work was a direct outgrowth of Nazi ideology. Nazi nutritionists stressed the importance of a diet free of petrochemical dyes and preservatives; Nazi health activists stressed the virtues of whole-grain bread and foods high in vitamins and fiber. Many Nazis were environmentalists; many were vegetarians. Species protection was a going concern, as was animal welfare.[2] Nazi doctors worried about overmedication and the overzealous use of X-rays; Nazi doctors cautioned against an unhealthy workplace and the failure of physicians to be honest with their patients—allowing momentous exclusions, of course, for the "racially unfit" or undeserving.

What are we to make of the Nazi antitobacco campaign or the public health initiatives launched to control cancer? How do we understand the efforts to curb asbestos exposure or exposures to X-rays and radium—or the campaign to secure food quality and "truth in advertising"? Did the Nazis do good work? Was some of that good work motivated by Nazi ideals?

It is difficult to write on this topic without participating in a kind of moral drama—the sort that boils down to questions such as whether "good can come from evil." I am always troubled by such questions, because they seem to stem from a kind of scarecrow image of fascism and a wooden, ahistorical image of science. I should make clear at the outset that it is not at all my goal to *praise* those scientists who, despite obstacles, managed to continue scientific work throughout the Nazi era. There is a tendency in Nazi science historiography to treat the survival of science—such as there was—as proof of the indomitable spirit of the intellect, but my concern is more to ask: what is science that it so easily flourished under fascism? What was it about German fascism that encouraged the progress of (certain kinds of) science, and why has this part of the story been lost to historical memory?

There is an image we have of fascism as a totalizing ideology: Nazi rhetoric and values are seen as having penetrated every crevice of German intellectual life. But that is a misconception, at least in part. Science was often tolerated as a faithful and neutral servant, an engine of economic and military power, blind to politics. Many fields of scholarship did turn out cheering squads for fascism, but just as frightening are the legions of subservients who continued to work quietly, reassured by the myth of cloistered neutrality. Through this lens, the "good science" of the Reich becomes evidence not of heroic ideological innocence but of a blind-eyed failure to reflect and resist—"irresponsible purity" in Herbert Mehrtens's aptly crafted phrase.[3]

I am one of those who believe it is important for scholars to be able to defend their choice of research projects. I should note that I would never have written the present book had I not already explored the more heinous aspects of Nazi medical crime in my first book, *Racial Hygiene: Medicine under the Nazis* (Cambridge: Harvard University Press, 1988), which can be regarded as a kind of prolegomenon to the present book. There I showed that many of the most brutal health initiatives came from physicians, that physicians were never coerced into collaborating with the regime, that

doctors were not pawns but pioneers when it came to Nazi policies of racial extermination.

My focus here is less on Nazi racial crime than on the activities of health activists lost to memory by virtue of their association with this terrible time. The point is not to rescue lost gems of wisdom or to exploit the past for the present, but rather to explore the troubling phenomenon of "quality science" under Nazism: science that we might well celebrate as pathbreaking were the circumstances of its origins peeled away, but also run-of-the-mill science that, like Hitler's watercolors,[4] is not obviously and indelibly a Nazi product.

Do we look at history differently when we learn that Nazi leaders opposed tobacco, or that Nazi health officials worried about asbestos-induced lung cancer? I think we do. We learn that Nazism was a more subtle phenomenon than we commonly imagine, more seductive, more plausible. We learn that the barriers which separate "us" from "them" are not as high as some would like to imagine. We learn that there are chilling parallels between those times and ours. But we also get a better sense of why so many Germans—and especially German doctors—welcomed the Nazi movement. Nazism was not about just Nordic supremacy or humiliating and then killing the handicapped; it was not only about territorial expansion or murdering Jews and Gypsies. It was all of these things in spades, but it was also about making jobs and cleaning up the streets and long-term care for the "German germ plasm."

Nothing in this excuses or balances—and if I thought it did, I would not have written this book. Nazism rightly stands as the low-water mark in twentieth-century moral culture, the ultimate refutation to ethical relativism and solipsistic egoism. Nothing anyone can say will change this. What I do hope to show, however, is that fascism is nuanced and complex, and that its appeal went deeper than we are usually willing to admit, and in different directions. Nazism was popular not just because Germans hated Jews. Antisemitism was central to Nazi ideology, but it was not the only or even the main reason people flocked to the cause. People saw

the movement as a source of rejuvenation—in public health and in other spheres as well. People looked to Nazism as a great and radical surgery or cleansing, and not always in ways that are abhorrent, even with the privilege of hindsight.

I HAVE chosen cancer as an organizing theme, because cancer gives us a window onto broader aspects of culture. Cancer has always been a frustrating disease, given both the insidious nature of its growth and its notorious resistance to therapeutic onslaughts. Cancer was on the rise in the 1920s and 1930s, and the millenarian leaders of the Thousand Year Reich wanted to know why. Cancer was a difficult symbol: a disease of civilization, of modernity; a not-yet-conquered foe. We shall be looking at these symbolic resonances, especially at how the language of cancer (tumors as Jews, Jews as tumors) expressed larger cultural idioms. Cancer becomes a metaphor for all that was seen as wrong with society, and not just in Germany (recall Nuremberg prosecutor Telford Taylor's postwar characterization of Nazism itself as "a spreading cancer in the breast of humanity"). Cancer gets attention, and cancer gets neglected, in ways that reveal deep struggles over the nature of disease and how it should be confronted.

The first two chapters look at the background to German cancer campaigns, including the extraordinary efforts made in the Wilhelmine and Weimar eras, when German medicine and public health became the envy of the world. We look at the *Gleichschaltung* (Nazification) of German cancer institutions and the fates of Jewish cancer researchers; we also explore the centrality of prevention in Nazi cancer ideology. The language of cancer is held up for scrutiny—the effort to replace foreign by Germanized technical terminology, for example, but also the push for public "enlightenment" concerning the value of early detection. We look at the muscular, problem-solving rhetoric of Nazi medicine, including calls for "final solutions" to diverse problems circa 1941—to the "bread" and "tobacco questions," just to name a couple of the lesser known.

Chapters 3 and 4 turn to genetic and racial theories of cancer, the persecution of Jewish cancer researchers, and the pioneering work done to identify workplace carcinogens. Readers may be surprised to find that German cancer theorists recognized that few cancers are heritable in any simple sense and that many (and perhaps even most) are caused by external irritations like tar, soot, asbestos fibers, and tobacco smoke. Radiation was a particularly feared source of malignancy, and at the same time that monuments were made to "martyrs to radiation" (almost always scientists, rarely technicians, never patients), lists of women and girls exposed to radiation (to induce abortion, for example) were drawn up to identify carriers of genetic damage. Germans in the 1930s become leaders in the identification of radon-induced lung cancer (especially among uranium miners) and lung cancers associated with asbestosis. New workplace hazards are identified, but usually in the context of what has been called *Selektionsmedizin*—the idea being that workers should be adapted to the workplace, and not just vice versa. Workers were screened en masse for early signs of lung or skin disease, and efforts were launched to protect women from cancer and reproductive hazards. Slave labor was eventually used to perform the dirtiest jobs, as a dual system of worker health and safety emerged—involving strict precautions for "healthy" citizens and precarious, life-threatening pollution for foreigners and *Untermenschen*.

Nazi food and body politics is the subject of chapter 5, where I examine what Hitler ate and why, and how the Führer's body became a propaganda tool to inculcate a healthy lifestyle among the masses. I look at the banning of the food dye known as "butter yellow," and the much-debated questions of whether things like meat, fat, and saccharine could cause cancer. I look at debates over food stockpiling, where militarists demanding large canned reserves ran afoul of organicists extolling the virtues of fresh fruits and vegetables. Alcohol, coffee, and tea, and much else, become the object of ideological struggle, especially as romantic concerns clashed with wartime urgencies.

Tobacco is the focus of the longest chapter in the book, a focus justified by the startling fact—heretofore unnoticed—that Nazi

Germany had the world's strongest antismoking campaign and the world's most sophisticated tobacco disease epidemiology. Nazi medical and military leaders worried that tobacco might prove a "hazard to the race," and Hitler intervened personally at several points to combat the hazard. Antitobacco activists pointed to the fact that while Churchill, Stalin, and Roosevelt were all fond of tobacco, the three major fascist leaders of Europe—Hitler, Mussolini, and Franco—were all nonsmokers. Hitler was the most adamant of the lot, characterizing tobacco as "the wrath of the Red Man against the White Man, vengeance for having been given hard liquor." The Führer even suggested that Nazism might never have triumphed in Germany had he not given up smoking! German epidemiologists meanwhile managed to prove, securely and for the first time anywhere, that smoking was the major cause of lung cancer. This, along with its subsequent neglect by chroniclers of medical history, is surely one of the most astonishing aspects of the Nazi war on cancer.

The final chapter looks at wartime and postwar science, the main point being that wartime urgencies compromised much of the public health optimism of the early Nazi era. Organic impulses (e.g., the push for whole-grain foods and natural herbal medicines) were justified as economical and therefore war-worthy—but long-term public health concerns of nearly every sort were placed on back burners (a notable exception being the killing of "racial inferiors," which continued unabated throughout the war). Here we also explore the mysterious case of the Reich Institute for Cancer Research established near Posen in occupied Poland in 1942: no one knows exactly what went on there, but there is evidence that the institute functioned as the nerve center of Hitler's biological warfare program, a sop thrown to the army's general staff to compensate for the emasculation of the atom bomb project.

I should note that I have organized the chapters loosely around the kinds of things that we today recognize as causes of cancer (genetics, radiation, diet, alcohol, and tobacco, etc.), well aware that some of my more puritanical colleagues may accuse me of "Whiggism"—reading the future into the past. I do this, I hope, not out of any subconscious desire to inflate the intellectual

achievements of my native informants—a common seduction among ethnographers—but rather from a desire to say something about what cancer itself was really like at this time (and after). Did the Nazi war on cancer influence German cancer rates? Were some strategies more successful than others? When was Nazism carcinogenic, and when did it manage to prevent some cancers?

One thing historians do is look for patterns in jarring juxtapositions; out-of-place oddities can be keys to larger truths.* My focus is therefore not so much on Nazi horrors (though there are several we shall have to face) as on substances and practices we do not normally associate with fascism: food and drink, chemicals and radiation, efforts to clean up factories and to detoxify the German lifestyle. This is the lesser-known "flip side" of fascism—the side that gave us struggles against smoking, campaigns for cleaner food and water, for exercise and preventive medicine.

Nazism itself I will be treating as an experiment of sorts—a vast hygienic experiment designed to bring about an exclusionist sanitary utopia. That sanitary utopia was a vision not unconnected with fascism's more familiar genocidal aspects: asbestos and lead were to be cleansed from Germany's factory air and water, much as Jews were to be swept from the German body politic. Nazi ideology linked the purification of the German body politic from environmental toxins and the purification of the German body from "racial aliens." Accurate and absurd fears blended promiscuously in the Nazi view of the world: there is a kind of *homeopathic paranoia* pervading the Nazi body ethos, a fear of tiny but powerful agents corroding the German body, a fear that is sometimes cruel and vicious, sometimes eerily on target.

This jarring mix of the sensible and the insane is surely one of

* Not every oddity is significant: surely one of the strangest is the fact that, in October of 1919, the *American Hebrew* decried the "holocaust" of "six million men and women." The oddity has been exploited by Holocaust deniers but is simply a remarkable coincidence and nothing more; see Martin H. Glynn, "The Crucifixion of Jews Must Stop!" *American Hebrew*, October 31, 1919, p. 582.

the most disturbing aspects of Nazism, but it also provides another key, I think, to understanding the Holocaust. Historians and social philosophers have for many years tried to reduce the sadder sides of fascism to capitalism, totalitarianism, militarism, antisemitism, or "the authoritarian personality"—all of which are central, though none is all-explaining. I tend to agree with Omer Bartov that the Holocaust is a kind of idiot's tale we can understand only in parts, never altogether;[5] but perhaps this quest for a sanitary utopia can help us bridge the discomforting gap between the horrific crimes of the era and its pioneering—if reclusive and now forgotten—feats in the sphere of public health.

One final note on a possible misinterpretation of this book. Those who point to Nazi environmentalism sometimes extract from this the message that there is a fascist danger inherent in any state-sponsored public or environmental health protection. Anti-tobacco advocates have been labeled "health fascists" and "Nico-Nazis," the rather contrived point being that since the Nazis were purists, purists today must be Nazis.[6] There is a Latin name for such a fallacy, the logical error is so simple. Tobacco does cause 80–90 percent of all First World lung cancers, and none of this is diminished by the fact that Nazi-era scientists were the first to prove the point. It is wise to cut down on sugar, fat, and foods preserved with chemicals, even though Nazi nutritionists issued similar recommendations.

We may be surprised by such things, but surely we cannot let them influence us in our choices of how to eat or work today. Or perhaps we should? I must admit that one reason I decided to write this book was to try to come up with an answer. Perhaps what is needed is a severing of the already frayed ties that once were said to conjoin technical and moral virtues; I'm not really sure. I am not usually one to claim that science is or even should be value-free, but I do think that if the Nazis were pioneers in cancer research, we need to know how this came about and what it means.

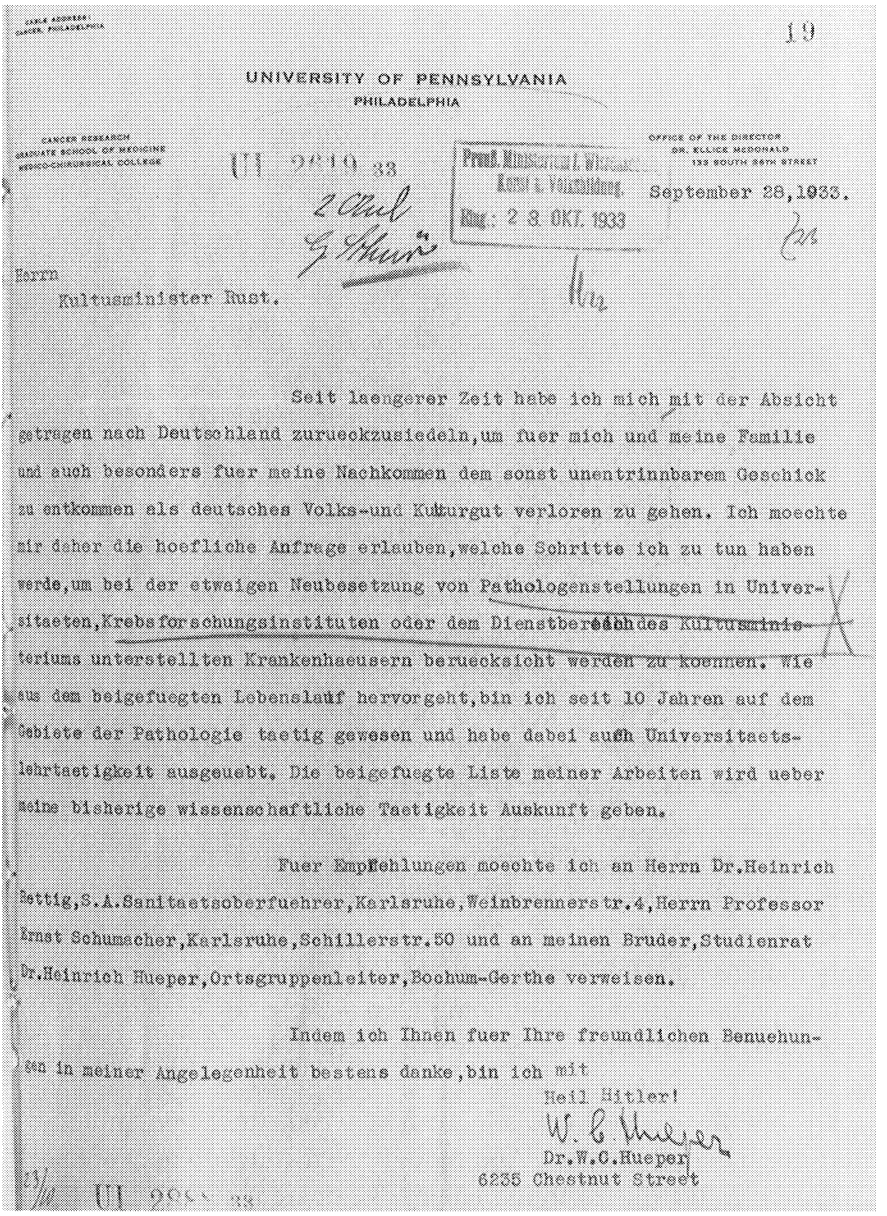
1

Hueper's Secret

> Of course! There is a great deal being done for cancer research in Germany. In every part of the Reich there are magnificent institutes, for which the Führer has provided large sums of money.
>
> *Adolf Butenandt, Germany's postwar president of the Max Planck Gesellschaft, in a 1941 radio interview*

On September 28, 1933, Dr. Wilhelm Hueper, chief pathologist at the University of Pennsylvania's Cancer Research Laboratory, wrote to the Nazi minister of culture, Bernhard Rust, inquiring into the possibility of an academic or hospital appointment in the new Germany. Hueper had emigrated to the United States in 1923, and we know from his unpublished autobiography that he had worn the swastika on his Freikorps helmet as early as 1919. Now, only months after the *Machtergreifung* (Nazi seizure of power), the young pathologist was petitioning Nazi authorities to allow him to return to Germany to restore his bonds to German culture (*deutsches Volks- und Kulturgut*).[1]

It is not always easy to distinguish between conviction and opportunism in such matters. And though the distinction may not be as crucial as we like to think, Hueper's apparent support for the Nazi regime (he ends his letter with an enthusiastic "Heil Hitler!") still comes as a shock to anyone unfamiliar with the political landscape of European cancer activism in the 1930s (see fig. 1.1). The story is a disturbing one, one that seems to violate some of our most cherished political prejudices. Hueper, after all, went on to



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September 28, 1933.

Herrn
Kultusminister Rust.

Seit laengerer Zeit habe ich mich mit der Absicht getragen nach Deutschland zurueckzusiedeln, um fuer mich und meine Familie und auch besonders fuer meine Nachkommen dem sonst unentrinnbarem Geschick zu entkommen als deutsches Volks- und Kulturgut verloren zu gehen. Ich moechte mir daher die hoefliche Anfrage erlauben, welche Schritte ich zu tun haben werde, um bei der etwaigen Neubesetzung von Pathologenstellungen in Universitaeten, Krebsforschungsinstituten oder dem Dienstbereich des Kultusministeriums unterstellten Krankenhaeusern beruecksicht werden zu koennen. Wie aus dem beigefuegten Lebenslauf hervorgeht, bin ich seit 10 Jahren auf dem Gebiete der Pathologie taetig gewesen und habe dabei auch Universitaetslehrtaetigkeit ausgeuebt. Die beigefuegte Liste meiner Arbeiten wird ueber meine bisherige wissenschaftliche Taetigkeit Auskunft geben.

Fuer Empfehlungen moechte ich an Herrn Dr. Heinrich Oettig, S.A. Sanitaetsoberfuehrer, Karlsruhe, Weinbrennerstr. 4, Herrn Professor Ernst Schumacher, Karlsruhe, Schillerstr. 50 und an meinen Bruder, Studienrat Dr. Heinrich Hueper, Ortsgruppenleiter, Bochum-Gerthe verweisen.

Indem ich Ihnen fuer Ihre freundlichen Benuehungen in meiner Angelegenheit bestens danke, bin ich mit

Heil Hitler!

W. C. Hueper

Dr. W. C. Hueper
6235 Chestnut Street

U I 9251 33

FIG. 1.1. Letter of September 28, 1933, from Wilhelm Hueper to Nazi culture minister Bernhard Rust, requesting an academic position in the new Reich. Hueper is widely regarded as the "father of American occupational carcinogenesis" and the inspiration for the cancer chapter in Rachel Carson's famous *Silent Spring*. Note the "Heil Hitler" above the signature. Source: Geheimes Staatsarchiv, Preussischer Kulturbesitz, Berlin-Dahlem, Rep. 76 Va Sekt.1 Tit. IV, #5, vol. 27, p. 19, with thanks to Michael Hubenstorf.

become "the father of American occupational carcinogenesis," the man who tried to alert medical officials to the hazards of unventilated uranium mining, and the man who, more than any other, brought the cancer hazards of pollutants in our food, air, and water to scientific attention. Hueper was the guiding light behind the ominous cancer chapter in Rachel Carson's *Silent Spring* (titled "One in Every Four"), and it was Hueper who, only months before his death in 1979, was showered with honors for his work on occupational and environmental cancer.[2]

How could the hero of *Silent Spring* have found hope in the Nazi movement? What were German fascists saying and doing about cancer that might have led a man such as Hueper to bet his future on the Thousand Year Reich?

Triumphs of the Intellect

A great deal is known about science and medicine in the Nazi era. We know that while certain kinds of science were destroyed, others flourished. Sciences of an applied nature were especially encouraged, as were sciences that fit within the larger program of Nazi segregation and extermination.[3] We know that physicians joined the Nazi party in very large numbers, that about 60 percent of all biologists joined the party,[4] and that roughly 80 percent of all professors of anthropology—most of whom were physicians—were members.[5] We know that the Nazi regime maintained a large medical surveillance capacity, as part of its program to "improve the strength of the German nation";[6] we know that there is a curious blend of the modern and the romantic in Nazi culture—a blend Jeffrey Herf has characterized as "reactionary modernism."[7]

Part of our story has to be understood in light of the fact that Nazism took root in the world's most powerful scientific culture, boasting half of the world's Nobel Prizes and a sizable fraction of the world's patents. German science and medicine were the envy of the world, and it was to Germany—the "land of scholars and poets"—that many academic hopefuls flocked to cut their scientific teeth.

The Third Reich itself cannot be thought of as an icebound retreat into intellectual slumber: think of television, jet-propelled aircraft, guided missiles, electronic computers, the electron microscope, atomic fission, data processing, industrial murder factories, and racial research—all of which either were first developed in Nazi Germany or reached their high point at that time. (The recent sci-fi film *Contact*, based on Carl Sagan's novel, reminds us that the first television broadcast strong enough to escape the planet featured Hitler's speech at the opening of the 1936 Berlin Olympics.) There are innovations in the area of basic physics (nuclear fission, discovered by Otto Hahn and Lise Meitner in 1938), hormone and vitamin research, automotive engineering (the Volkswagen was supposed to be the "people's car"), pharmacology, and synthetic gasoline and rubber (I. G. Farben in 1942 controlled more than 90 percent of the world's synthetic rubber production).[8] The nerve gas sarin and the chemical warfare agent tabun are both I. G. Farben inventions of Third Reich vintage—as is the opiate methadone, synthesized in 1941, and Demerol, created about this time with the name "pethidine."[9]

There are many other examples. Nazi aeronautic engineers designed the first intercontinental ballistic missiles—never actually assembled—and it was Germans in the 1940s who built the first jet ejection seat. German engineers built the world's first autobahns, and the world's first magnetic tape recording is of a speech by Hitler. American military leaders knew that German scientists had not slept through the Hitler era, and after the war commissioned dozens of leading scholars to write book-length summaries of their fields, a veritable *Encyclopedia Naziana* with entries on everything from biophysics to tropical medicine. It is interesting what fields they chose to ignore: occupational health and antitobacco research, for example.[10]

It is therefore surely not enough to say that the human inventive spirit was suppressed or even that it survived as "pockets of innovation" immune to Nazi influence.[11] The story of science under German fascism must be more than a narrative of suppression and survival; we have to find out how and why Nazi ideology *promoted* certain areas of inquiry, how research was turned and twisted,

how projects and policies came and went with the movement of political forces. If we find that certain sciences flourished, we then have to ask: What was science that it so easily adapted to fascist politics?

Little has been written on Nazi cancer research and policy,[12] and there are interesting reasons for the neglect. Historians who have focused on Nazi medicine have tended to concentrate either on political and racial ideology, or on the complicity of physicians in Nazi campaigns of sterilization, segregation, and medicalized killing (e.g., the "euthanasia" operation).[13] These deadly aspects of medicine under fascism are far better known than many other aspects—addiction or vitamin research, for example—that were also woven into Nazi ideology. Public health professionals have paid little attention, both because of the distance of history and because little might appear to be gained by pointing to Nazi success in fighting food dyes, tobacco, or occupational dust. The forgetfulness is especially strong in Germany itself, where the predictable ahistoricity of cancer researchers is compounded by their unstudied aversion toward anything that went on in the 1930s and 1940s. Nazism, for many Germans, is still a dirty word.

The topic is sobering, given that Nazi health activists may well have developed the most aggressive and successful cancer prevention program of the era. This should not be too surprising, since German cancer research—and medical research more generally—was the most advanced in the world by the time of the *Machtergreifung* (1933). German scientists were the first to discover skin cancers caused by coal tar distillates, and the first to show that uranium mining could cause lung cancer (both in the 1870s). Germans were the first to identify a bladder cancer hazard of aniline dye manufacture (in 1895),[14] a lung cancer hazard from chromate manufacture (1911),[15] and a skin cancer hazard of sunlight exposure (1894).[16] German physicians were the first to diagnose an X-ray-induced cancer (in 1902) and the first to prove, by animal experimentation, that X-rays could cause leukemia (1906). They were even the first to suggest that domestic indoor radon might prove to be a health hazard, in 1907.[17]

There are many other examples one can name[18]—and in the

interest of completeness (and at the risk of tedium), I shall continue. Johannes Müller in the 1830s pioneered the microscopic analysis of malignancies, identifying tumors as composed of cells, and Rudolf Virchow in Berlin in the 1860s developed the theory of cancer as caused by local "irritations."[19] Germans were pioneers of cancer transplant research,[20] and early in the development of the theory of dose-response latency (*Latenzzeit*).[21] Germans were among the first to propose a major role for hormones in carcinogenesis[22] and were early on aware of what is sometimes today called the "xenoestrogen hypothesis"—the idea that powerful petrochemical carcinogens such as methylcholanthrene may work by mimicking the body's natural hormones.[23] It was a Munich pathologist (Max Borst) who first classified tumors according to their histogenesis, the method used today by the World Health Organization to classify cancers.[24]

The list goes on: Germans were the first to utilize tissue stains as chemotherapeutic agents (in 1922),[25] and were the first to inject thorotrast (thorium dioxide) into patients to improve the contrast in X-ray photographic plates (1928).[26] German geneticists were the first to show that colon cancer could be inherited as a dominant trait, and it was a German zoologist—Theodor H. Boveri—who first proposed that chromosomal abnormalities might be responsible for the onset of malignancies (1902).[27] Germany was the site of the first international congress of cancer research (Heidelberg and Frankfurt, in 1906)[28] and the first country to establish a permanent journal devoted exclusively to cancer research.[29] Germany pioneered the optical diagnosis of cancer, being home to the development of not just X-rays and the colposcope but also the rectal endoscope—a candlelit version of which was introduced in Frankfurt in 1807.[30] German was arguably, at least for a time, the *language* of international cancer research: in 1915, for example, when Katsusaburo Yamagiwa and Koichi Ichikawa announced their experimental production of coal tar cancer in laboratory animals, they published it *auf Deutsch*.[31] Germans were also apparently the first to suggest that secondhand tobacco smoke might be a cause of lung cancer—in 1928.[32]

German scientists in the mid-1930s elaborated on this scientific base. The Reich Anticancer Committee (Reichsausschuss für Krebsbekämpfung) established in 1931 was enlarged, and an ambitious new journal, the *Monatsschrift für Krebsbekämpfung* (Monthly journal for the struggle against cancer), published by the notoriously antisemitic J. F. Lehmann publishing house, was launched in 1933 to coordinate the anticancer effort. More than a thousand medical doctoral theses explored cancer in one form or another in the twelve years of Nazi rule; only diseases of the blood attracted more attention.[33] Cancer registries were established, including the first German registries to record cancer morbidity (incidence) and not just mortality (deaths). Efforts were made to strengthen prevention-oriented public health measures, including occupational safeguards, laws against the adulteration of food and drugs, bans on smoking, and programs to reduce the use of cancer-causing cosmetics, to name only a few.

Could Nazi anticancer measures have influenced postwar German cancer rates? The question is intriguing, given that Germany shows a fairly clear-cut decline in overall age-adjusted cancer mortality since the 1950s, when one would first expect the policies and practices of the 1930s to show up in cancer mortality and morbidity statistics. It is also possible, though, that measures taken with the goal of improving general health—the support for female athletics, for example, or the campaign to increase the consumption of whole-grain bread—may have had unintentional anticancer consequences. Other steps taken in consequence of Nazi goals may have had anticancer effects—the pronatalist movement, for example, which increased the number of women having babies and lowered the average age of conception—though the biggest factor of all may have been the war itself, as tobacco rationing and low-fat, near starvation diets became the order of the day, along with other "lifestyle" changes now known to reduce cancer risk.

How does one interpret such possibilities? Could one of the most murderous regimes in history actually have succeeded in lowering cancer rates for certain segments of its population? Who benefited from such policies and who suffered?

"The Number One Enemy of the State"

The strength of German interest in cancer must be understood in light of the fact that Germany by the beginning of the twentieth century was a wealthy, highly industrialized nation with one of the highest cancer rates in the world. German labor unions and socialist parties had begun to emphasize occupational health and safety in the final decades of the previous century, an era of dramatic innovations in social medicine—including the world's most elaborate social welfare system, launched in 1883 in response to socialist demands. German medicine was powerful and politicized, and Berlin was one of the world's strongest centers for medical research.[34] Germany also had a strong "back to nature" (*Lebensreform*) movement that saw cancer as an unhealthy expression of the distance humans had traveled from their organic origins. Given that the insurance bureaucracy saw prevention as more cost-effective than curative medicine, it is perhaps not surprising that Germans in the 1930s took steps to combat cancer.

The *kinds* of cancers focused on must also be understood against the backdrop of Germany's unique professional, ideological, and technological history. Aniline dye cancer was discovered in Germany in the 1890s, largely because Germany by this time was the world's leading producer of synthetic colorings.[35] German professional societies were the first to establish informal standards for radiation protection,[36] not just because X-rays were discovered in Germany, but also because the professional societies in that country were large and influential. Germans were early to perceive the cancer hazards of tar, asbestos, and radium, prompted by the strength of the union movement and the political parties representing workers' interests. (Germany was the first nation to recognize lung cancer as a compensable occupational disease for uranium miners—in 1926—and by 1934 was the envy of American industrial toxicologists wanting to emulate its practice of closed-system manufacture to prevent dye-related bladder cancer.)[37] Germans formed organizations to combat alcohol and tobacco, be-

cause these were seen as violating the organic integrity of the German body—a concern that informed both the racial hygiene and *Lebensreform* (organic health) movement.

Recognition of a steadily growing cancer incidence was one reason German physicians launched the world's first state-supported anticancer agency, the Central Committee for Cancer Research and Cancer Combat (Zentralkomitee zur Erforschung und Bekämpfung der Krebskrankheit), founded in 1900.[38] Increasing cancer rates had been observed in Germany since the end of the nineteenth century, and by the 1920s these escalating rates had become a major scandal.[39] Cancer surpassed tuberculosis as the nation's second-most common cause of death in 1928; cancer was declared "the number one enemy of the state" (*Staatsfeind Nummer Eins*), surpassing even the major form of heart attack.[40] (All forms of heart attack combined, however, were still the number one cause of death.) A hundred thousand Germans died of cancer every year in the 1930s; another half a million lived and suffered with the disease.[41] Germany by this time had one of the highest cancer rates in the world—owing to the longevity of its populace and its cancer-inducing habits—and one of the most elaborate medical organizations struggling to deal with it. It also had a health-conscious political party with unprecedented police powers allowing it to combat the growing threat.

One of the more arresting features of the Nazi anticancer effort was its emphasis on prevention. Prevention fit with the Nazi approach to many other problems: racial hygiene, for example, was supposed to provide long-term care for the German germ plasm, by contrast with more traditional social or personal hygiene.[42] The emphasis was not, of course, entirely new: socialist and communist physicians had long stressed prevention, and Nazi physicians could even cite Plato's admonishment that "care of the body" was better than the healing art, since "the former makes the latter superfluous."[43] The Weimar period saw several important moves in this direction, reflected in the establishment of statistical offices, propaganda campaigns to stress early detection, and legislation to protect occupational health and safety. What was new in the Nazi

period were augmented police and legislative powers to implement broad preventive measures, and the much-touted "political will" to deploy those powers to strengthen the health of the nation.

Erwin Liek and the Ideology of Prevention

The Danzig surgeon Erwin Liek (1878–1935) was one of the more vocal heralds of the Nazi approach to cancer. Liek is a complex and fascinating person whom we shall reencounter in our discussion of Nazi food fashions (see chapter 5). He is widely reviled today as the "father of Nazi medicine"; yet he was also a cosmopolitan world traveler who managed to publish kind words of praise for Freud as late as 1934.[44] In his thirty-year professional career he produced writings on a broad range of topics—including a stirring attack on overzealous human experimentation[45]—but he was best known for his critique of the "spiritual crisis" of modern medicine, medicine enervated by specialization, bureaucratization, and scientization, warped by greed and myopia but also by its failure to appreciate the natural capacity of the body to heal itself. Liek was a hands-on practitioner but also something of a romantic, yearning after simpler times when science was not the be-all and end-all of medicine, when the doctor-patient relationship was (purportedly) intimate and sacred. As founding editor of *Hippokrates*, a magazine of general health interest with strong ties to homeopathy and the natural foods movement, he helped to usher in a broader and more holistic medicine of the sort embraced by many Nazi leaders—medical men like Kurt Klare, Karl Kötschau, Walter Schultze, and Ernst Günther Schenck, but also high-placed politicos like Heinrich Himmler, Julius Streicher, Rudolf Hess, and even Hitler himself.[46]

Liek is difficult to pigeonhole, however, and his attitude toward Nazism was, at least for a time, ambivalent. He never joined the party but was nonetheless apparently offered—prior to 1933 and by Hitler himself—the position of Reich Physicians' Führer (eventually assumed by his admirer, Gerhard Wagner; Liek's failing

health precluded his appointment).[47] By 1933 he was clearer in his praise for the Nazi movement. In an essay that year titled *The World of the Physician*, he applauded Hitler for "destroying Marxism, rejecting the delusions of equality (*Gleichheitswahn*), defeating the party system, silencing the do-nothing chitchat parliament (*Schwatzparlament*), unifying the German people, reducing unemployment," and much else. Nazism represented the "dawn of freedom" (*Aufbruch zur Freiheit*) and the cleansing of Germany's "Augean stables."[48]

There is little evidence of overt antisemitism in Liek's many published works, but there are oblique insinuations that are hard to misinterpret—his assault on analytic laboratory methods, for example. Even his attack on human experimentation has an antisemitic resonance, given the degree to which "Jewish excesses" in this area had been publicized. (In the most notorious case, the dermatologist Albert Neisser in 1895 had injected young prostitutes—the youngest being only ten—with a syphilis serum, hoping to confer immunity; many instead contracted a full-blown case of the disease, prompting a widespread debate on the ethics of human experimentation and the world's stiffest restrictions against experimental abuse—Prussia's famous 1900 Code.)[49] We know that he privately lamented the "jewification" (*Verjüdung*) of German medicine—in letters to his close friend and publisher, Julius F. Lehmann, for example—blaming Jews for overvaluing exactitude and for bringing a certain superficiality and "showmanship" into science. Liek became friends with the Munich-based Lehmann, Germany's leading medical publisher and an ardent Nazi,[50] after Lehmann printed his first and most successful book, *Der Arzt und seine Sendung* (1926), which went through many editions and sold more than a hundred thousand copies (mostly after 1933). Liek professed to sympathize with the publisher's concern for "the frightening influence of the Jews" in medicine; he agreed that the "Jewish-dominated Weimar Republic" was an era of "spiritual poverty," and hoped that the nation's new leaders would resurrect German honor, morality, and selflessness. Liek's wife later praised him as an "early struggler for Nazi ideals."[51] He might more properly be described as a kind of medical Nietzsche, Germany's

Frederick Hoffman,[52] if not its Rachel Carson (for his critique of environmental degradation).

Liek wrote two books on cancer. In his 1932 volume on "The Spread, Prevention, and Control of Cancer," the Danzig surgeon argued that cancer was a disease of civilization, a "cultural disease" whose incidence was on the rise. A natural way of life was the best protection: "the simpler and more natural one's way of life, the rarer is cancer."[53] Liek endorsed the view that cancer was rare among the primitive races of the world, a view dating back at least to the 1840s and subsequently upheld by people like Frederick Hoffman, the American insurance agent, and Vilhjalmur Stefansson, the Arctic explorer.[54] Liek was convinced that the growth of cancer could be traced to things like arsenic pesticides, artificial fertilizers, excessive smoking and drinking, and sexual promiscuity. People were getting too many X-rays, and stress from the rapid pace of modern life was weakening our overall bodily resistance, making us vulnerable to cancer.

Faulty nutrition, in Liek's view, was the single most important cause of cancer. Japan's high rate of stomach cancer, for example, must have something to do with their consumption of "enormous quantities" of spicy foods, compounded by their infrequent consumption of meat. In Germany, the pumping of massive quantities of petrochemical preservatives and colorings into foods must play a role. Vegetables, Liek complained, were too often "greened" with copper sulfate (one hundred milligrams per kilogram was the legal limit in his day), while sugar was routinely "blued" with a dye known as "ultramarine" (a sulfated sodium aluminum silicate—later replaced by the coal tar derivative indanthrene). Bread was regularly bleached with benzoyl peroxide after many of the natural vitamins and fibers found in traditional whole-grain breads had been destroyed by overprocessing.[55] All of these things, in Liek's view, contributed to the cancer burden.

In his second book on this topic—*The Struggle against Cancer*, published in 1934—Liek admitted exaggerations on the part of some food critics. He did not believe, for example, that aluminum pans were a cause of cancer (a near-hysterical fear in the late 1920s), and he questioned whether the dangers of lead or mercury

had been exaggerated (fears of poisoning from dental fillings had already begun to be raised). He also corrected certain errors in his 1932 book—that raw sugar was superior to refined, for example, and that the most common "blueing" agent of sugar was a coal tar derivative (the coal tar product was introduced later).[56] The larger point was still valid, however, he maintained: cancer could be prevented. If lifestyle degradations were behind the increase, then lifestyle changes could reverse the trend. What was needed was a reorientation of medicine from cure and care to prevention: *Fürsorge* and *Nachsorge* (comfort and care) were to be complemented by an increased attention to *Vorsorge* (taking precautions).[57]

Liek was well aware that powerful financial interests would resist efforts to remove carcinogens from the environment—suppliers of alcohol, food products, and pharmaceuticals, for example, who made it their business to convince the public that beer was food, that tin cans were a convenience, and that Brand X toothpaste would fight cavities. He pointed out that resistance was to be expected from such companies; he also pointed out, though, that new political winds were blowing which might change all this. (He doesn't actually mention Nazism, but that is clearly implied). It had taken ten years for his critique of surgery to be taken seriously, he says, but his cancer complaints were likely to gain a sympathetic hearing sooner. Universities (e.g., the University of Vienna) were establishing cancer clinics featuring dietary therapeutics, and cancer journals (e.g., the *Zeitschrift für Krebsforschung*) were recommending nutritional expertise as a requirement for directors of German cancer clinics. Germans were preparing, he says, to move from "care for the individual" to "cancer prevention on a large scale—for the entire people."[58]

Liek's was not the only voice from the political right-of-center advocating prevention. A broad range of Nazi officials—from Gauleiter Julius Streicher to Reich Health Führer Leonardo Conti—championed a renewed focus on preventive medicine.[59] The *Monatsschrift für Krebsbekämpfung* adopted the motto: "The earlier a tumor is treated, the better the likelihood of a cure." The *Zeitschrift für Krebsforschung* announced that "prevention is the best therapy."[60] The ideology of prevention merged with the

ideology of "one for all and all for one" (*Gemeinnutz geht vor Eigennutz*) that was yet another hallmark of Nazi thought: as one antitobacco activist put it, nicotine damages not just the individual but the population as a whole.[61]

Cancer prevention also fit with the Nazi emphasis on nature and natural modes of living.[62] Hitler, we should recall, was a vegetarian and did not smoke or drink; nor would he allow anyone else to do so in his presence—excepting the occasional woman.[63] (As already noted: Benito Mussolini of Italy and Generalissimo Franco of Spain were also nonsmokers, a point not lost in Nazi health propaganda; attention was also drawn to the fact that Roosevelt and Stalin smoked cigarettes, while Churchill smoked cigars.)[64] Vegetarianism got a boost: more than one writer for *Hippokrates* revived Friedrich Beneke's nineteenth-century recommendation that cancer patients adopt a vegetarian diet.[65] Karl Kötschau, professor of "organic medicine" at Jena since 1934 and chief spokesman for the natural healing movement, launched a tirade against the lead arsenate pesticides used on wine grapes,[66] and Weimar-era worries over the health effects of lead from water pipes and toothpaste tubes were revived. Efforts were made to control food additives and to limit the oversalting of prepared foods.[67]

This emphasis on a return to nature led to some curious alliances. German Seventh-Day Adventists with their theology of health reform endorsed the regime in the summer of 1933, rejoicing in the fact that the nation was now in the hands of a man "who has his office from the hand of God, and who knows himself to be responsible to Him. As an anti-alcoholic, non-smoker, and vegetarian, he is closer to our own view of health reform than anybody else." The Adventist stress on temperance and healthful living seemed to fit with the new swing of things, though their aversion to pork must have raised some eyebrows. The sect was banned on November 26, 1933, and it took some clever politicking by its leader, Hulda Jost, to produce a reversal.[68]

Homeopaths likewise joined with Nazi enthusiasts to argue that mercury could cause memory loss and that arsenic could cause depression. The homeopathic stress on the potency of rare (or absent!) trace elements fit well with the idea that powerful bodily

disturbances were likely to come from our surrounding ourselves with exotic substances like mercury, lead, and arsenic. The idea of prevention fit well with this notion that health could be restored by avoiding exposure to rare but powerful agents corroding the German *Volkskörper*.

Early Detection and Mass Screening

The emphasis on prevention gave the Nazi war on cancer new hope: there is an *optimism* to the anticancer effort that distinguishes it from programs of the Weimar era (see fig. 1.2). Felix Grüneisen, general secretary of the Reich Anticancer Committee, in 1933 hailed a coming era of "planned cancer combat" on an unprecedented scale.[69] Nazi officials rejected the timid, "ostrich-like" approach of previous efforts and promised renewed strength in this area.[70] Medical journals cited the Führer's brag that *impossible* was simply not a word in the proper Nazi's vocabulary.

Early detection was a centerpiece of Nazi-era cancer propaganda. Physicians lamented the number of late-stage cancers presented in their offices—especially among women, given the growing conviction that tumors of the uterus or breast found early stood a much greater chance of being healed. The claims made for early detection sometimes sound grandiose: Hans Hinselmann, inventor of the colposcope (an illuminated optical device used to screen for uterine and cervical cancer), predicted in 1938 that if his device were widely used, mortality from these diseases would virtually disappear. He also cautioned that physicians who failed to use it were complicit in the annual deaths of 400,000 women from uterine and cervical cancer worldwide.[71]

Calls for early detection were not, of course, entirely new in the Nazi period. Georg Winter, chief physician at the University of Berlin's Women's Clinic, had noticed around the turn of the century that nearly three-quarters of the women seeking treatment for uterine cancer at his office were showing up too late to be helped. In December of 1902 he launched a campaign in Königsberg (where he was now director of the university women's clinic)

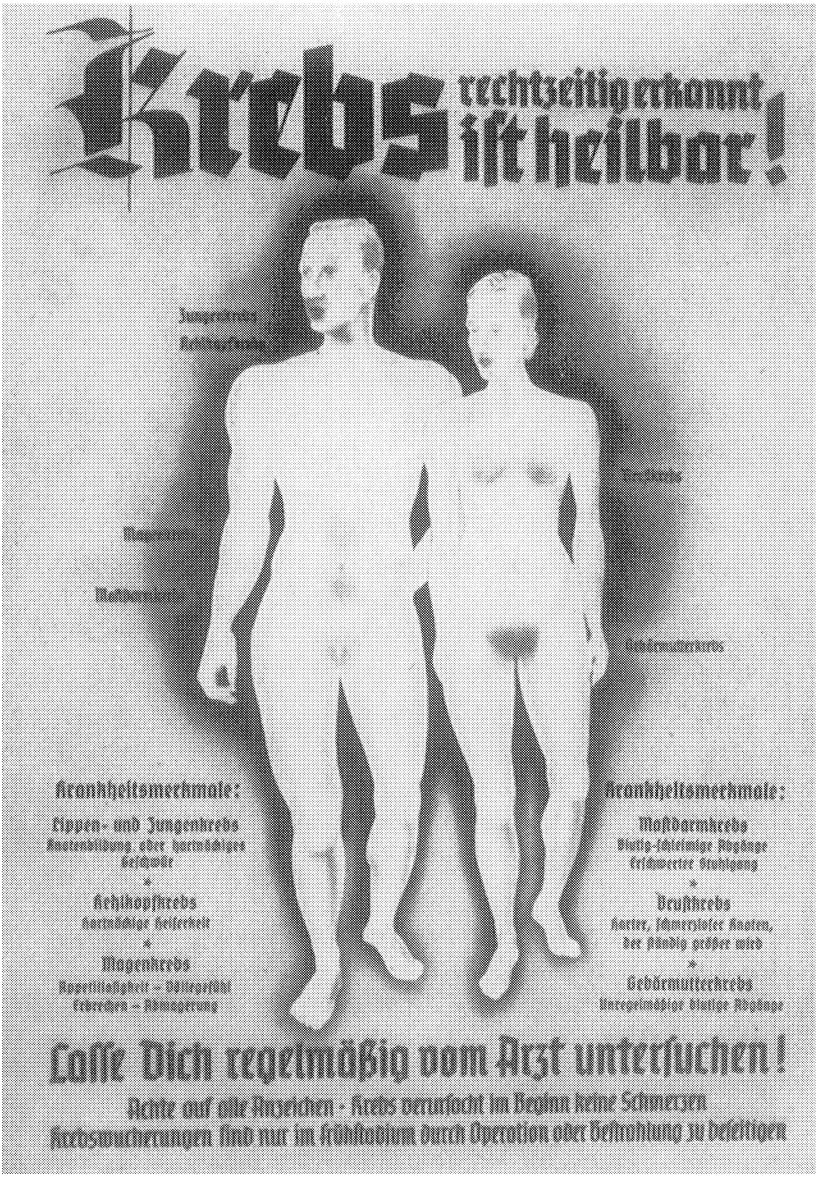

FIG. 1.2. "Cancer can be cured, if detected early!" The Nazis launched mass campaigns to encourage early screening; this poster gives some of the early warning signs for cancer and urges the public to consult their physicians regularly. Source: Friedrich Kortenhaus, "Krebs," in *Deutsches Gold: Gesundes Leben—Frohes Schaffen*, ed. Hans Reiter and Johannes Breger (Munich: Röhrig, 1942), p. 439.

to encourage early detection, sending 1,200 brochures to physicians, plus 1,100 copies of a handbill to midwives advertising the value of early detection. He also published a popular article, printed in every regional newspaper, alerting women to the early signs of the disease and the need for prompt diagnosis. Winter in 1933 celebrated his efforts as "the first organized campaign against cancer."[72]

In the Nazi era, the propaganda designed to encourage (especially) women to consult their physicians was kicked up several notches. Radio and newspaper announcements urged women to submit to annual or even biannual cancer exams, while men were advised to check up on their colons as often as they would check out the engine of their car (see fig. 1.3). "Cancer counseling centers" were established in most German cities, both to popularize the value of early detection and to advise people with cancer of their therapeutic options.[73] Leaflets were also distributed to alert physicians to the value of early detection. Hans Auler helped produce a propaganda film stressing the value of early diagnosis and the curability of cancer; the film's very title (*Jeder Achte*) cautioned that "one in eight" Germans would eventually succumb to cancer[74]—a rhetorical device Rachel Carson would later introduce to American readers.[75] Women were instructed in how to examine their own breasts for cancer (see fig. 1.4; Germans seem to have been the first in the world to take this step (American physicians would not issue comparable instructions until the 1960s).

Hundreds of thousands of women were probed for cancer in this period. In Königsberg alone, 25,000 women had submitted to such exams by 1942, which resulted in the discovery of 129 previously undetected cancers.[76] The massive propaganda for early detection subsided somewhat after 1938, the "peak year" for such propaganda by many accounts. The war put a damper on such efforts, though hopes remained bright in the eyes of some. In a 1942 article on "cancer campaigns of the future," gynecologist Georg Winter looked forward to a time when propaganda (*Aufklärung*) would be combined with mass screening. Radio propaganda was to a play a key role, as was the example of the cured cancer patient ("a patient freed from cancer is a good propagandist"). Physicians