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Otto Pohl for The New York Times

A smelting worker in Nikel, Russia, uses a breathing filter as he trims metal and molten metal splashes into a mold. Industry is blamed for excessive disease and birth defects in northern Russia.

Far North in Russia, the Mines' Fatal Blight

By MICHAEL SPECTER

Special to The New York Times

NIKEL, Russia — The snow falls black in this city 200 miles above the Arctic Circle, big flakes of freezing ash covering the ground, the rivers and what little is left alive.

Once a place of unparalleled beauty, in just 30 years this stark region, the Kola peninsula, has become one of the most poisoned spots on earth — relentlessly transformed by Russian industry into a laboratory of ecological destruction.

Two of the world's biggest and most antiquated nickel smelters, here and in Monchegorsk, spew more heavy metals and sulfur dioxide into the air each year than any other such factories in Russia, more than all of Scandinavia.

Pine forests are now tracts of desiccated stumps. The once bountiful fish have begun to vanish, too, poisoned by nuclear, industrial and municipal waste. The rivers are so overcome by pollution that they themselves are now rich troves of minerals and metal.

"In Russia today, it is difficult to

say which is the worst place, the dirtiest and most dangerous place," said Aleksei V. Yablokov, chairman of the National Security Council's committee on ecological health and safety. "But what has happened to the Kola peninsula is a disaster on any scale. On the Norwegian side of the border they have a sight-seeing post. It says, 'Come see the dirtiest place on the globe.' They could be right."

If the assault on nature has been punishing, the effects on people

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Pollution clouds the air outside the nickel-smelting factory in Monchegorsk as workers wait for a bus. This smelter in the Kola peninsula

and another one nearby spew more sulfur dioxide and heavy metals into the air each year than do all the factories of Scandinavia.

The Russian Far North, Fatally Blighted by Its Mines

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have been worse. Lung cancer, lead poisoning and emphysema are epidemic among the workers in the factories and mines.

Women have one of the highest rates of spontaneous abortions anywhere. Malformed hearts and bone-marrow defects afflict more than 25 percent of all babies. Data gathered by the Murmansk Department of Health suggest that more than 40 percent of industrial workers suffer from respiratory disease, five times Russia's high national norm.

Then, There Are Cigarettes

The rates of heart disease and cancer are eight times as high as those in Moscow, but virtually everyone smokes so it is impossible to say which illnesses are caused by the ceaseless stream of sulfur dioxide and which by cigarettes. The average male life expectancy is 50 years, among the lowest in the developed world.

There are probably cities that pose greater threats from radiation or have dirtier water or more polluted air. There are places where the birds are disappearing faster and the people may be sicker. But there is perhaps no place where every form of pollution has been distilled with greater effect.

Nobody has ever shut a plant here because it violated air-quality standards, or closed a gaping 200-foot-deep pit mine, or ripped asbestos from the walls of a school. Even now, after Russia enacted its first major environmental protection law in 1991, permissible pollution limits are exceeded without a thought. When fines are levied, the weakened ruble has made them a joke.

An Overcrowded Clinic

Health officials repeatedly warn the million residents never to pick mushrooms or eat locally grown fruit.

"Every year we have twice as many people coming here as the year before," said Dr. Galina A. Kovelova, who runs the small, overcrowded clinic at the Center for Occupational Diseases in Kirovsk, not far from the huge Monchegorsk smelter. "And every year they are sicker than the last. We do what we can for a little while, and then we send them home."

In 1992, 20 percent of all workers had to be hospitalized for respiratory illnesses. Samples taken from the urine and hair of children show levels of nickel and other metals far above any acceptable medical limit.

Even though it is still difficult for Russians to move within their own country, residents have begun to flee. The Murmansk region, which includes the whole peninsula, had a population of 290,000 in 1939 and slightly more than a million 50 years later. But dur-

ing the past three years, the city of Murmansk and smaller places like Nikel have seen steady declines: at least 5 percent of the people leave each year.

To the politicians, the ecologists and the residents, the crisis is clear. It is clear to the people of Norway and Finland who suffer from the acid rain the smelters produce and the nuclear and chemical waste the Soviet military dumped for years in the Barents Sea.

And it is clear to President Boris N. Yeltsin, who has promised aid for the region (as did his predecessor, Mikhail S. Gorbachev).

What is far less clear is what Russia's financially hobbled Government will be able to do about it.

Scandinavian countries have pledged more than \$200 million to renovate the Dickensian factories that each year transform raw ore into a nearly half the world's nickel. But it would cost at least \$2 billion, and nobody believes that Russia can come up with that kind of money for such a small region.

Many people have suggested simply closing the plants. The Russian "green movement" has seriously proposed bombing them.

A Rare Money-Maker

But in a country where much industry is brazenly oversubsidized, the nickel works actually make money. There are not many geese still laying golden eggs in Russia and nobody — not a local commissioner, a mayor or a member of the national legislature — is going to go after those that do.

"We keep talking about the catastrophe to people's health and to the environment," said Per Antonsen, the Norwegian coordinator of a task force set up with Russia to address the environmental problems. "But I know there is another potential catastrophe: what will people do to survive if we took away their jobs?"

The fragile Kola economy is now more dependent than ever on the metal industry, which employs 80 percent of the local work force.

Once the mighty Northern Fleet of the Russian Navy, based in Severomorsk and Zapolyarny, guaranteed a steady flow of rubles, fresh food and supplies to the barren North. No more. The navy can no longer afford to service its own nuclear fleet, almost all of which is berthed along the fjords of the district. The Murmansk fishing industry is dying.

That leaves metal and mining. With its rich harvest of ores and minerals, its enviable gas and oil deposits in the Barents Sea and its ice-free port at Murmansk, the region still has enormous economic and strategic promise.

The only good news for the health of the residents is also the worst news in



The New York Times
Life expectancy for men in Nikel is only 50 years, among the lowest in the developed world.

Would Moscow or St. Petersburg be so much better?"

It is a question that could only be asked by someone like Mrs. Antrovka, who has spent all her 57 years here. It is impossible to spend 10 minutes in the factory without feeling sick. Thick black smoke crowds out the oxygen. Showers of sparks fly everywhere. Men with protective leather caps labor on the dusty floor. Nobody uses earplugs, though the noise could shatter a bone.

But pay is good on the factory floor: 400,000 rubles (\$230) a month, three or four times the average industrial wage.

The town is just as depressing. Soviet-style apartment blocks line the main road. They are painted in gay, Mediterranean pastels: Apartment 101 is chalk blue, 206A is pale mustard.

But no one is fooled. Even sunny days are darkened by the soot, and the town is still dominated by the hulking statue of a Soviet worker. The day-care center is called the Metal Playground, but the air is poisonous so few children play outdoors.

There is one clothing store, one clinic, one movie theater (showing a feature on dinosaurs). Shops have names like Food, Meat and Fruit, though they do not seem to live up to their names. The skating rinks and ferris wheels so common in Russian cities are absent.

The Death of Trees

The geographical characteristics of the peninsula are such that metals and chemicals that would break down in warmer climates, and thus become far less dangerous, sit preserved for months just beneath the icy topsoil.

"We are at the edge of the world's northernmost timber line," said Vyacheslav V. Nikonov, of the Institute of Northern Ecological Problems. The institute, a division of the Russian Academy of Sciences, is in Apatity, not far from some of the world's biggest mines. "The polar ecosystem is extremely fragile. For thousands of years the people here were always closely linked to the forest. If you destroy the forests, you will kill the people too."

His team tests the atmosphere, water, trees and soil, trying to find an antidote, something to turn back the tide of ruin. They are encouraged by work in Germany, where entire swaths of forest have been restored.

"It can be done," said Mr. Nikonov, a native of the region. "But it won't be easy."

But most residents have simply grown accustomed to life, and death, in Nikel.

"This is the way we live," said Sergei V. Poplov, a 32-year-old metal worker at the Nikel factory who looks as if he could be twice that age. "I have a wife, a family, like everyone else. I was born here. I'll die here. And until then, I'll do my job."

the region: pollution actually decreased by 10 percent last year, but that was entirely due to slack demand for metals. Industrial production is falling; exports are down.

The aging Kola nuclear power plant, 60 miles west of Apatity, which supplies the area with most of its electricity and is among the most dangerous in Europe, is on the verge of a complete shutdown because its defects are too costly to fix.

"I understand the ecological problems that have been created here," said Yuri Y. Zudin, director of the Nikel Metal Factory, which employs 10,000 and processes almost a quarter of the world's nickel. "But you have to understand what these jobs mean to people."

Some Find It a Good Life

Nikel, Apatity and Monchegorsk are company towns in the purest sense. The factories run the schools, the stores, the apartment buildings. The single long cafeteria-style restaurant in Nikel, a town of 40,000 people, is operated by the factory. The company pays for summer vacations, and when workers die the company buries them.

"We have more here than many other people have," said Galina A. Antrovka, whose husband, father, two sons and brother all work at the plant. "The pay is still good. There is food.