

LINDA
CLARK, M.A.

The conveniences that
may be killing us
From luminous watches
and color TV to nuclear
power plants!

Author of STAY YOUNG LONGER

ARE YOU
RADIOACTIVE?



"Many Wise Individuals . . .

. . . believe that we have outdone Pandora in our rush to develop nuclear power. Plutonium and Tritium, Strontium-90, Iodine-131 and Cesium-137 are inevitably finding their way into living matter—with what harmful effects?

"Add to these the fallout from color TV, microwave towers, high voltage power lines and medical X-rays and fluoroscopes, and we have a potentially serious situation requiring immediate attention.

"Linda Clark examines the chief sources of radiation and outlines what is known of their effects on man. . . . She tells how they may be coped with, providing hope for a clouded future.

"The urgency of her message is not to be denied."

—From the Preface

ARE YOU RADIOACTIVE?

How to Protect Yourself

Linda A. Clark, M.A.



PYRAMID BOOKS



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Dedication

To the late Mira Louise, who recognized this problem long before the rest of us caught up with it.

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Publisher's Preface

In Greek mythology Pandora was created by the gods as a sort of temptation for man. When she was presented to Epimetheus, it was with a box containing all the evils in the world, and an order not to open it lest they escape. Despite the warning, Pandora peeked and they did escape, never to be contained again. Only the virtue, Hope, remained in the box to console mankind for the many troubles that were henceforth to afflict him.

When man split the atom in an effort to find new sources of power, he created a series of elements not found in nature. These elements—eleven of them so far—and the radio-active isotopes of already existing elements, have been released into the atmosphere by the process known as fission. They are now part of our environment. And they are here to stay, with ecological effects—some known, but mostly unknown—on all living things, particularly man, who stands at the end of the food chain and has for some time been accumulating them in his body.

Many wise individuals believe that we have outdone Pandora in our rush to develop nuclear power. Plutonium and Tritium, Strontium-90, Iodine-131 and Cesium-137 are inevitably finding their way into living matter—with what harmful effects? Add to these the fallout from Color TV, microwave tow-

ers, high voltage power lines and medical X-rays and fluoroscopes, and we have a potentially serious situation requiring immediate attention.

In this short study, Linda Clark, in her role as reporter, examines the chief sources of radiation and outlines what is known of its effects on man. After describing the many dangers to human health, she tells how they may be coped with, offers remedies for some cases, preventive measures for others, thus providing Hope for a clouded future. The urgency of her message is not to be denied.

Devin A. Garrity

ARE YOU RADIOACTIVE?

1 *What Goes on Here?*

PEOPLE are getting sick of hearing about pollution. It is becoming, they think, a boring, monotonous subject, and what can an individual do about it anyway?

These people do not realize that of all negative traits most common to Americans, the greatest is apathy. More important, in addition to becoming sick of hearing *about* pollution, most people are now becoming sick *from* pollution, yet nobody seems to recognize the fact or know what to do about it. Doctors are agreeing that more and more people are becoming sick, and their sickness is harder to cure. This sickness baffles patients and doctors alike. It is not only physical, but mental-emotional. Patients are becoming irritable, or panicky because their symptoms won't go away, and

you can't blame them. Because the symptoms are so new, or because they mimic other diseases, doctors do not recognize or understand them since their medical training did not prepare them for these new environmental diseases. They prescribe an antibiotic, or a drug, or may even tell the patient it is all in the mind, and hope the problem will go away. Meanwhile, the doctors, themselves, are becoming victims of these same new environmental diseases and are becoming as concerned as their patients.

The new environmental diseases, resulting from pollution, are world-wide and everyone may become affected if something is not done, and quickly. There is very little research and very little awakened interest in this whole new field of health. Fortunately there are a few dedicated investigators who are really concerned and have been learning how we can help protect ourselves in various ways. This help, which has not come a moment too soon, follows. It behooves each person to get to work *immediately* and apply these measures of self-protection, or he may wish later that he had.

The most insidious of all of these pollution threats to health is radiation. While we wander around in a daze, not realizing what is going on, this threat was foreseen as long ago as 1777, and again a century later, by two world-famous men, George Washington and Alfred Lord Tennyson.

The first prediction appeared in a vision to George Washington at Valley Forge in 1777. Washington related the vision to Anthony Sherman who at the age of 99 told Wesley Bradshaw about it on the 4th of July, 1859, in Independence Square, Philadelphia.

Sherman said, "I want to tell you an incident of Washington's life—one which no one living knows

of except myself. And if you live, you will before long see it verified. Mark the prediction: you will see it come true." (The revelation was first published in 1859.) Sherman then explained to Bradshaw that Washington often withdrew into the thicket to pray for guidance to help bring his country and his army through the dark days of tribulation. After one of these periods of prayer, he stated, Washington emerged shortly after dusk, returning to his quarters looking shaken and dazed. After a preliminary conversation, Washington suddenly made a decision to reveal what had happened during his stay in the thicket and told Sherman about the visitation of a celestial being who had appeared to him, to describe the future, none of which had yet come to pass. Here are Washington's words:

"Presently I heard a voice saying, 'Son of the Republic, look and learn,' while at the same time my visitor extended an arm eastwardly. I now beheld a heavy white vapor at some distance arising fold upon fold. This gradually dissipated, and I looked upon a strange scene. Before me lay spread out in one vast plain all the countries of the world—Europe, Asia, Africa, America. I saw rolling and tossing between Europe and America the billows of the Atlantic; and between Asia and America lay the Pacific.

"'Son of the Republic,' said the same mysterious voice as before, 'look and learn.' At that moment I beheld a shadowy being like an angel standing, or rather, floating in mid-air between Europe and America. Dipping water out of the ocean in the hollow of each hand, he sprinkled some upon America with his right hand while with his left he cast some upon Europe. Immediately a dark cloud raised from these countries and joined in mid-ocean. For a while it remained stationary and then moved slowly westward, until it enveloped America in its murky folds. Sharp flashes of lightning gleamed through it at intervals, and I heard the smothered groans and cries of the American people. A second time the angel dipped water from the ocean as before,

and sprinkled it on the land. The dark cloud was then drawn back to the ocean, in whose heaving billows it sank from view.

"A third time I heard the mysterious voice saying, 'Son of the Republic, the end of the century cometh; look and learn.' At this the dark, shadowy angel turned his face southward, and from Africa I saw an ill-omened spectre approach our land. It floated slowly and heavily over every town and city of the latter. As I continued looking, I saw a bright angel, on whose brow rested a crown of light on which was traced the word UNION, bearing the American flag, which he placed between the divided nation and said, 'Remember, ye are brethren.' Instantly the inhabitants, casting from them their weapons, became friends once more, and united around the national standard.

"And again I heard the mysterious voice say, 'Son of the Republic, look and learn.' At this the dark, shadowy angel placed a trumpet to his mouth and blew three distinct blasts; and taking water from the ocean, he sprinkled it upon Europe, Asia and Africa. Then my eyes beheld a fearful scene. From each of these countries arose thick, black clouds that were soon joined into one. And throughout this mass there gleamed a dark red light by which I saw hordes of armed men, who moved with the cloud, marching by land and sailing by sea to America—which country was enveloped in the volume of the cloud. And I dimly saw these vast armies devastate the whole country, burning the villages, towns and cities that I had beheld springing up. As my ears listened to the thundering of the cannon, clashing of swords and shouts and cries of millions in mortal combat, I again heard the mysterious voice saying, 'Son of the Republic, look and learn.' When the voice ceased, the dark, shadowy angel placed his trumpet once more to his mouth and blew a long and fearful blast.

"Instantly a light as of a thousand suns shone down from above me, and pierced and broke into fragments the dark cloud which enveloped America. At the same time the angel upon whose head still shone the word UNION, and who bore our national flag in one hand and a sword in the other, descended from heaven attended by legions of bright angels. These immediately

joined the inhabitant of America, who, I perceived were well nigh overcome, but who immediately took courage again, closed up their broken ranks, and renewed the battle.

"Again amid the fearful noise of the conflict I heard the mysterious voice saying, 'Son of the Republic, look and learn.' As the voice ceased, the shadowy angel for the last time dipped water from the ocean and sprinkled it upon America. Instantly the dark cloud rolled back, together with the armies it had brought, leaving the inhabitants of the land victorious.

"Then once more I beheld villages, towns and cities springing up where they had been before, while the bright angel, planting the azure standard he had brought into the midst of them, cried with a loud voice: 'While the stars remain in the heavens, and the sky sends down dew upon the earth, so long shall the Republic last.' And taking from his brow the crown on which was blazoned the word UNION, he placed it upon the standard while the people, kneeling down, said 'Amen!'

"The scene instantly began to fade and dissolve, and I at last saw nothing but the *rising, curling vapor* [emphasis added] I at first beheld. This also disappearing, I found myself once more gazing upon my mysterious visitors, who in the same voice I had heard before, said, 'Son of the Republic, what you have seen is interpreted thus: Three great perils will come upon the Republic. The most fearful will be the last, passing which the whole world united shall not prevail against her. Let every child of the Republic learn to live for his God, his land, and his Union.' With these words the vision vanished, and I started from my seat feeling that I had seen a vision wherein had been shown me the birth, progress and destiny of the United States."

"Such, my friends," concluded the venerable narrator, "were the words I heard from Washington's own lips, and America will do well to profit by them."

¹ Washington's Vision at Valley Forge, 1777. As related by Wesley Bradshaw; first published in 1859. *The National Tribune*, August 13, 1931.

It is reasonably clear that two of these predictions given by the celestial being have already taken place: the Revolutionary and the Civil wars. It appears that the third is *now* taking place and that the "rising, curling vapor" which could not be defined in those early days no longer mystifies us; it can easily be identified as radioactivity, coming from various sources.

Tennyson also predicted something of the sort a century later, in his own vision described in his poem, "Locksley Hall," from which I take the following lines:

For I dipt far into the future, far as human eye
could see,
Saw the Vision of the world, and all the wonder
that would be:
Saw the heavens fill with commerce, argosies of
magic sails,
Pilots of the purple twilight, dropping down with
costly bales:
Heard the heavens fill with shouting and there
rain'd a ghastly dew [emphasis added]
From the nations' airy navies grappling in the
central blue.

Far along the world-wide whisper of the south-
wind rushing warm
With the standards of the people plunging
through the thunderstorm;
'Til the war drum throbbed no longer, and the bat-
tle flags were furled
In the Parliament of man, the Federation of the
world.
There the common sense of most shall hold a fret-
ful realm in awe
And the kindly earth shall slumber, lapped in uni-
versal law.

Alfred Lord Tennyson,
English poet (1809-1892)

Radioactivity is today beginning to be found in air, soil, water, plants, animals and man. Where and how do we get it? What are the symptoms? What can we do about it? I will try to answer these questions in the following chapters.

2 Where Does Radioactivity Come From?

RADIATION cannot be seen, felt or heard. Where do we get radioactivity? For the most part, from three major sources: nuclear bomb detonation and testing; various forms of man-made radiation; and nuclear power plants. Actually, all are man-made, but nuclear explosions and power plants, initiated by man, soon contaminate the air, soil and water with radioactive isotopes—elements that have become charged—creating an atmospheric pollution which gets out of control and becomes a hot line to all living organisms, including people. In spite of violent denials that any of these radioactive isotopes are dangerous, there is documented proof that *all are insidiously dangerous to health*. We can no longer hide our heads in the sand, ostrich-like, and hope the trouble will go away. It won't. It is too late. The sources of radiation are here to stay. Instead, we must learn how to defend ourselves from them. Fortunately, there is a little help, to be discussed here.

Scientists and others involved with the use of nuclear power are fond of telling us that there is natural or background radiation everywhere: in rocks, soils, food, cosmic rays, etc. This is often used as a red herring to keep us from being concerned about man-made radiation, which is the real cause of danger. It is true that there *is* such a thing as natu-

ral or background radiation; that it is greater at high altitudes than at sea level, and is greater in emanations from such rocks as granite than from limestone. However, this type of radiation occurs in such small amounts that it has never posed a threat anywhere comparable to that of man-made radiation. Furthermore, nothing can be done about it.

The explosion of atomic and thermonuclear weapons has increased the total radiation to an alarming degree.¹ Other man-made sources of radiation are raising the level still higher. As Ralph Nader points out, radiation to which man is exposed comes from such sources as "industrial construction, atomic energy plants, household appliances, radio-isotopes internally administered to diagnose and treat malignancies, and as tracers in metabolic, circulatory, and hematologic research."²

These man-made devices include X-ray machines, TV sets (especially color TV), microwave ovens and towers, the laser beam, food irradiation, fluoroscopes and luminous watch and clock dials, to name just a few. There is incontrovertible proof supplied by the U.S. Government of danger from such devices.

Meanwhile, let's look at The Bomb, the greatest source of all radiation.

After an open nuclear test, such as dropping a Bomb, thousands of tons of radioactive matter are sucked up into the air. Some "débris" falls to earth immediately, some is carried around the earth by

¹ D.S. Rawson, M.A.: "Radiation and Nuclear Homeopathy," a monograph with particular reference to Tritium and Carbon-14, with a foreword by Dr. A.T. Westlake. (English Publication)

² "Radiation Control for Health and Safety Act of 1967," hearings before the Committee on Commerce, United States Senate, Ninetieth Congress, Second Session, Part 2.

winds before spilling earthward or being brought to earth more gradually by rain and snow. Dr. Edward Teller has stated that some particles have risen as high as the stratosphere and may take from 1 to 10 years to sift downward. Meanwhile, the radioactive débris attached to minute dust particles continues to give off radioactivity until it eventually decays years—sometimes thousands of years—later.

Underground nuclear tests have been used with the hope that there would be less fallout than from open testing—or none at all. For those who think underground testing is safe, provided there is no vent in the earth, Dr. Edward Martell, of the Cambridge Air Force Research Center, has stated, "I think in connection with the Iodine-131 problem (one of the deadliest forms of radioactive iodine-causing thyroid cancer) we should look to our underground tests quite carefully as a possible contributing, and conceivably *the* important source."³

Roger Rapoport writes: "Even the underground shots create hazards, by venting radiation through fissures and causing small earthquakes . . . radiation from the December 16th, 1970, Nevada underground test was detected in twelve western states."⁴

This is not the only hazard of underground blasts. Such a blast of giant intensity can and does send answering shivers through the core of the earth that cause earthquakes in distant areas that have never before experienced a quake. For example, people in some New England states have registered amazement at quakes following an underground test in the Western part of the United States, though they often did not realize the cause.

³ Clark, *Get Well Naturally*, chap. 32, bibliography

⁴ Rapoport, *The Great American Bomb Machine*

the cases of childhood leukemia over an eight year period. The fallout originated in Nevada, more than 2,200 air miles away.

"Those affected included children born as long as 10 years after the incident. These facts are contained in the report of Prof. E. J. Sternglass of the Department of Radiology of the University of Pittsburgh. He said the fallout came from a 43 kiloton nuclear blast set off in Nevada in April, 1953."

He also stated that there is a characteristic five year delay in the onset of the disease, following exposure, in children or pregnant mothers.⁸

As more radioactivity is released, more contamination is accumulated in living beings. Antlers collected in Scotland in 1957 showed eleven times the amount of Strontium-90 found in 1952.⁹ In St. Louis, Missouri, whenever a child lost a tooth a certain family sent it to the Greater St. Louis Citizens Committee for Nuclear Information, where it was examined for Strontium content. This should stimulate others to set up similar testing services and thus be independent of the AEC for information. Meanwhile, since that time, countless detonations have taken place, and are taking place throughout the whole world. The hazards are cumulative, regardless of the source of radiation.

Why doesn't somebody *do something*? Why isn't the public warned and given protective measures? Some scientists have tried to sound warnings. Dr. Linus Pauling has predicted large scale genetic damage from radiation. Dr. Barry Commoner, Dr. Edward Martell, Dr. Edward Teller, Dr. John Gofman and Dr. Arthur Tamplin, as well as Dr. Ernest J. Sternglass, and many others, all of them experts

⁸ *Saga*. August, 1970

⁹ "These Precious Days." *New Yorker*, June 20, 1959 and January 30, 1960

world powers are trying to vie with each other for international supremacy, as well as to frighten other countries and keep them from dropping The Bomb, which could decimate the country attacked. They do not seem to care that there are no boundaries for the resulting fallout. It is blown around the world by shifting winds and can accumulate in any area, and in all forms of life. For example, long before the Amchitka test, the bones of reindeer collected at Little Delta, Alaska, were found unusually high in Strontium-90, which causes one form of radioactivity. This fact puzzled investigators because the area had had no detonation and only a relatively light amount of fallout coming from other regions where detonations had occurred. The explanation was soon discovered: the light amount of fallout had been absorbed by moss from rain and snow from the stratosphere. The reindeer ate the moss which was proved to be the source of the contamination.⁶

Yet these tests go on and on, many of them unannounced to the public. As I write this in late 1972, the fifth underground blast this year has been detonated under the Nevada desert. Another of comparable intensity to Amchitka has been exploded by the Soviet Union.⁷

Apparently no one is immune to such distant blasts. Dr. Geno Saccomanno, a world renowned pathologist, states:

"The long range effects of radiation know no boundaries in time and space, and forecasts are notoriously inaccurate.

"For example, radioactive fallout dumped on the Albany-Troy, N.Y. area during a 1953 rainstorm doubled

⁶ "These Precious Days," *New Yorker*, October 31, 1959

⁷ *United Press*, November 3, 1972

The five megaton mile-deep nuclear test at Amchitka Island detonated November 6, 1971, was opposed by many scientists and laymen alike. They predicted unprecedented resulting quakes as well as cracks in the earth's crust. After the test was over these people held their breath waiting for the giant earthquake that never happened.

But the worried scientists and citizens were right, after all. Nine months later came the report of the delayed reaction from this test.⁵ Dr. E. R. Engdahl, a research geophysicist with the National Oceanic and Atmospheric Administration, announced that twenty-two earthquakes and hundreds of after-shocks had resulted from the Amchitka test explosion. Some of the quakes occurred seven days or more after the test; others three months later and at this writing, over a year later, they are apparently still continuing. Chicago was surprised to have its first, though somewhat minor, earthquake in 1972.

There was much opposition to this Amchitka test up to the last minute. Environmentalists unsuccessfully sought to prevent it through a legal suit against the Atomic Energy Commission for fear of resulting earthquakes and tidal waves. They were hushed like naughty children and told that nothing serious could possibly happen. A family was even planted on location to witness and "prove the safety" of the test. I shudder at what may happen to these people later, since exposure to lower level radioactivity (as compared to open bombing such as the Hiroshima incident) can have delayed effects. Dead animals were found soon afterward in the immediate area of the Amchitka test.

Why do we have these tests anyway? Because

⁵ *United Press Report*, August 31, 1972

in varying degrees on radioactivity and the resulting damage, are just a few who have tried to warn both the public and the Atomic Energy Commission itself. But all have been derided, belittled, even persecuted and called "nuclear nuts," "doomsday forecasters" or "sensationalists." The AEC maintains there is no health hazard from the Nevada tests; that radiation levels are being adequately monitored. Such statements have been found false, as writer Paul Jacobs points out after a study-in-depth of the whole incredible shield of self-protection behind which the AEC is hiding.¹⁰

Today nearly everyone may have some radioactivity; it varies with the individual. It is because of a concern over the lack of information and education for self-help (since none seems to be forthcoming from government agencies) that I have accumulated whatever shreds of information I could find and am reporting them to you to be put into immediate use for your own protection. Not everything is known, to be sure, but *anything* helpful to protect health is better than nothing. Don't you agree?

¹⁰ Paul Jacobs: "Precautions Are Being Taken by Those Who Know." *Atlantic Monthly*, February, 1971

3 What are the Symptoms of Radioactivity?

THERE are many different radioactive isotopes, or elements that are radioactive. Not everything is fully known about the effects of them all. Some results of a few of these radioactive elements have been discovered, however, and they may lead us to other clues or to remedies.

Strontium-90

Strontium-90 has an affinity for, and burrows into, the bones, producing a tired, aching feeling. It can also be deposited in teeth. Since calcium is also present in bones and teeth, it has been found to act as a preventive, provided the calcium itself is not contaminated by fallout.

Some foods have a lower affinity for Strontium-90 (or Sr.-90, as it is usually abbreviated) than others. Lettuce seems to have the ability to distinguish between Sr.-90 and calcium, and to absorb less Sr.-90. But Sr.-90 does lodge in rough-skinned vegetables, including potatoes and carrots, and in the outer leaves of green leafy vegetables. Washing spinach thoroughly has been found to dislodge up to 60% of Sr.-90 content.

It is possible to reduce Strontium-90 in your garden soil (if it is acid) by adding calcium-rich lime in various forms. This is said to prevent 80% of an average plant's uptake of Sr.-90.

We have been told in the past by nutritionists to eat the skins of potatoes and smooth fruits such as apples, pears, etc. because of the high vitamin/mineral content. Now, because of the Sr.-90 deposit, this is no longer safe. Potatoes, carrots and fruits *should* be peeled; peas should be shelled; and any rough-skinned vegetable should be washed thoroughly. Nuts build their own protection because of their shells.

Iodine-131

Radioactive iodine, like ordinary iodine, lodges in the thyroid gland, and may eventually cause thyroid cancer. This is especially true in the case of children, according to Dr. Harold Knapp, formerly of the AEC staff.¹ Iodine-131 is found not only in the air after a nuclear test (even underground) but it is found in large amounts in milk near nuclear testing areas.

According to a government bulletin, 17 of the 19 children on Rongelap Island in the Pacific (Marshall Islands) who were exposed to radioactive iodine developed thyroid lesions.² Here is the *Associated Press* report of the incident:

New Cases of Fallout Illnesses

Two new cases of thyroid growths have been found in a group of children exposed to fallout in the Marshall Islands from a 1954 Bikini atomic bomb test, a scientist has reported.

Seventeen of 19 children—90%—who were under 10 years of age when exposed on Rongelap, the atoll

¹ Paul Jacobs: "Precautions Are Being Taken by Those Who Know." *Atlantic Monthly*, February 1971.

² "Radiation Bio-Effects," Summary Report, Jan-Dec. 1970. U.S. Dept. of HEW, Public Health Service, No. BRH/DBE 70-7

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nearest the test site, now have developed thyroid abnormalities.

They are now between 15 and 24 years old.

An unexpected wind shift during the 1954 test carried fallout from Bikini at the western end of the Marshall Islands back over several islands east of Bikini.

The thyroid, at the base of the neck, produces a hormone containing iodine that has a profound influence on growth and development.

The thyroid gland receives a much larger dose than the whole body because of the process of selective absorption by the thyroid of radioactive iodine from food and water.

There are indications of retardation of growth in many of the children, but the effect is pronounced in two teen-age boys, whose growth has slowed by up to four years, the scientist said.

Dr. Robert A. Conard, head of a Brookhaven National Laboratory medical team that conducts annual examinations of the Marshall Islanders, said three teen-age boys and a 29-year-old woman will be brought to Brookhaven, at Upton on Long Island, for study to see if they need thyroid surgery.

Dr. Conard, who has visited the islands more than 15 times, found the two newest cases in March, 1968. The first case of thyroid nodules appeared in 1963.

Nine children, and a woman with thyroid cancer, have been brought to Brookhaven in past years for treatment.³

There is another example closer to home. Ninety children between the ages of 10 and 18, living a few hundred miles from the Nevada nuclear test site, developed nodules (like those found in inhabitants of the Marshall Islands) which could lead to thyroid cancer in some instances.⁴

The government has admitted, "Atmospheric testing of nuclear weapons at the Nevada Test Site produced fallout containing Iodine-131. The subse-

³ *Associated Press*, July 1, 1968

⁴ *Science News Letter*, Nov. 13, 1965

quent development of thyroid neoplasms (resulting from Iodine-131) has been established by various studies . . .”⁶

Strontium-89

The same government bulletin states; “The reports of the effects of Sr.-89 on animals showed that the radiation affected blood, bone marrow, and caused hemorrhages, although daily doses may be acutely toxic to some groups and produce little observable effects on others.”

Cesium-137

Cesium-137 is taken up by the soft tissues, particularly muscle. Furthermore, it emits a radioactivity of a very penetrating kind, and may also go to the germ cells to produce harmful genetic effects.⁶

There have been other results of general fallout, both in Utah and other areas in the U.S. Although no particular form of radioactivity was pinpointed, Edward Riley, M.D., of Salt Lake City, stated that he was convinced that both leukemia and cancer have resulted from exposure to radioactive fallout.⁷ This is now becoming a world-wide hypothesis.

Paul Jacobs has pointed out that over one hundred uranium miners have died of lung cancer due to exposure to uranium radioactivity in the mines. This result was discovered years ago in Europe and has become indisputable.⁷

⁶ “Radiation Bio-Effects,” Summary Report, Jan-Dec. 1970, U.S. Dept of HEW, Public Health Service, No. BRH/DBE 70-7

⁶ *New York Times*, Aug./Sept. 1961. Reported on the science page.

⁷ Paul Jacobs, *Ibid.*

⁷ Paul Jacobs, *Ibid.*

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Plutonium radioactivity is considered one of the most dangerous types since it, too, is an indisputed cause of lung cancer.⁷ Microscopic amounts can bring it on.

Tritium and Carbon-14 are more recent radioactive element discoveries. They cause abnormalities in the chromosomes by disturbing the DNA and RNA, both of which are important in protecting the genes. Nervous and muscular tension, brain disturbance, mucous and catarrhal conditions, lung problems and other disturbances can also result from its contamination.⁸

These radioactive substances are only a start, and are just a few of the great many radioactive elements produced by nuclear plants or reactors, according to Richard Curtis and Elizabeth Hogan.⁹

How do you acquire radioactivity? In three ways:

1. By breathing it from the atmosphere.
2. Eating it on foods where it has been deposited.
3. From your own skin where it has lodged, particularly through cuts or open sores.

It is not contagious, so you cannot "catch" it from another person.

Radioactive fallout is often more concentrated in areas with heavy amounts of rain, snow, or even fog.

It can also be acquired at high altitudes during jet flights.

Think Whole—Become Whole

Before I enumerate other disturbances caused by

⁷ D.S. Rawson: "Radiation, Nuclear-biology and Homeopathy," *Acta*, 1971 V. 6

⁹ Curtis and Hogan, *Perils of the Peaceful Atom*

radiation in humans, let me caution you *not* to imagine that you have all the symptoms mentioned nor to dwell upon these diseases. The mind can produce good health as well as ill health, as proved by William James, the esteemed psychologist who found blisters could be produced under hypnosis. The conscious mind can influence the subconscious mind, which has no reasoning power but merely gives blind obedience to thought, imagination and visualization. Even a doctor who has thoughtlessly mentioned the name of a disease to a patient (who did not have the disease at the time), will note that the patient might later develop it by constantly thinking about it, worrying about it and imagining it—a super-highway to subconscious control. Fear is a magnet and should be immediately replaced with confidence.

There are many instances of healing from constructive thinking. Although I, myself, am not a Christian Scientist, I am amazed at those of my friends who are, and who practice constructive thinking constantly. They have a much better health record than most people. Remember, the subconscious will pick up any crumb of negative, or constructive, thought or feeling, whichever is offered it, and go to work to produce it. As the Human Dimensions Institute, at Rosary Hill College, Buffalo, New York, advises, "Think whole to become whole."

Meanwhile, however, we must be intelligent about prevention and not expose ourselves to unnecessary radioactivity from *any* source.

Richard Curtis and Elizabeth Hogan state¹⁰ that

¹⁰ Curtis and Hogan, *Ibid*

each person has a small amount of radioactivity in his body absorbed from food, beverages, breathing,

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background radiation and cosmic rays. But some types of radioactivity produce more harmful results than others, even from minute quantities of radiation. Curtis and Hogan list the following adverse effects of radioactivity on humans:

- leukemia
- cancer
- anemia (acute)
- sterility in men and women
- nervous system disturbance and imbalance
- skin cancer
- cataracts
- bone, teeth and jawbone destruction
- brain disturbances, including epilepsy, paraplegia, twitches
- ulceration
- shortening of the life span
- genetic damage and birth defects in succeeding generations.

There are other disturbances, too. For example, Dr. Ernest J. Sternglass, professor of Radiation Physics at University of Pittsburgh has stated in connection with the deaths of babies under 28 days old:

“At the outset, I did not know for certain which of the isotopes in the fallout were causing the principal damage. But then I saw that each time the levels of the short-lived isotopes, such as Iodine-131 and Strontium-89, shot up to their highest peak, there was a sharp rise of infant mortality within a year . . .

“In the School of Public Health library, page after page of data showed . . . deaths from all types of non-infectious respiratory diseases such as lung cancer, emphysema, and bronchitis had increased especially dramatically among all age groups . . .

“The sudden rise of emphysema and bronchitis all over the U.S. and other countries, noted by I.M. Moriyama, following the onset of large scale atmo-

spheric releases of radioactivity in the air, was causing lung damage . . .”

Yet, as Dr. Sternglass points out, the Atomic Energy Commission insists that even the underground testing “is of such low intensity that it presents no danger.”¹¹

Such statements have been made again and again by spokesmen from the AEC which is supposed to be a protective agency. Meanwhile the tragedies of radioactivity are not only continuing, the results of the hazards are accumulating. Dr. Sternglass is one of the few scientists trying to tell the public the truth amidst the AEC double talk.

The late Mira Louise, of Australia, discovered the cause of certain mysterious disturbances in her patients, quite by accident. She routinely tested her patients for certain mineral deficiencies. When she found them, it was a simple procedure (explained in the chapter on Remedies) to correct the specific deficiency. Until May, 1957, there were no major changes among her patients. Then something happened. Mira Louise reported:¹²

“In June of that year, a dramatic change took place. From the analysis, it was obvious that something was robbing the people of potassium, calcium, sodium, iron, magnesium, sulphur, copper, silica and iodine. The cause was finally traced to nuclear fallout. Undeniable symptoms of radiation sickness were apparent in many instances. Where the deficiency of calcium had averaged only about 25, the new average deficiency was in the vicinity of 200 and over. The other minerals showed a proportionate or even greater deficiency.”

Mira Louise listed the symptoms she found trace-

¹¹ Sternglass, *Low-Level Radiation*

¹² Louise, *Survival in the Atomic Age*

What Are the Symptoms of Radioactivity? 35

able to radioactive fallout: anemia, pains in the bones and other bone disorders, cystic conditions, warts which become sore or swollen, recurring attacks of "flu," gastro-enteritis, headaches, tiredness which no amount of rest can relieve, numb hands and feet, boils, carbuncles, skin rashes, breathlessness, weakness, confused mental states with inability to remember, parched skin, a type of weeping sinus trouble, inflamed roof of mouth with swelling, buzzing in the ears, loss of appetite, distended or bloated abdomen, constipation, insomnia, dimming vision and falling hair.

Obviously, not all people would experience all of these symptoms; each person has his weak points and will display the ones to which he may be most susceptible. And of course these same symptoms may also be due to other causes. If caused by fallout, Mira Louise explained:

"Strictly speaking, the radioactive particles do not contaminate the body. They merely absorb the minerals, *the protective elements*, from the bones and blood, thus leaving the body more or less powerless to carry on the normal functions such as digestion, assimilation, elimination of waste matter, and the reproduction of new blood cells. Thus we see that the body is left defenseless with no means of nourishing or repairing its cells."

This is encouraging news because it gives us a clue as to how we can help the body begin its own recovery as well as prevent further damage from uncontrolled exposure. Meanwhile, we must recognize other man-made sources of radioactivity in order to avoid them. We can't stop nuclear bombing or testing, but we can avoid most of the others.

4 Man-made Radioactive Booby Traps

DR. HERMANN J. MÜLLER, who received the Nobel Prize for the discovery of the effect of radiation upon heredity, said: "From 35 years of laboratory experience with radiation, damage results; the damage either hurts our own bodies or those of the succeeding generations. Contrary to what you may have heard or read, there is no such thing as a 'safe' or 'harmless' dose. Effects are concealed or delayed."

Dr. Müller adds, "Fallout from a 100 megaton bomb would be likely to induce more than 100,000 cases of leukemia, bone cancer, and other fatal ills in the present population with *each* explosion."

But bombs are not the only source of radioactive danger. There are other types of equipment and appliances found in offices and homes which can cause radioactive contamination to millions of people. Information about such danger is usually kept from the public either because of the manufacturer's, distributor's or salesman's ignorance of the danger, or if the danger is known, it is carefully hidden so that it will not interfere with commercial or finan-

¹ Jack Harrison Pollack, "World's Greatest Scientist Reports on Fallout," *Saga*, April 1962

Also: Dr. Hermann J. Müller with Jack Harrison Pollack, "Let's Face the Truth About Nuclear Testing," *This Week*, June 10, 1962

cial profit. Here are some of the most hazardous sources of man-made radiation:

X-rays

Dr. Hermann Müller, mentioned above, often called the father of modern genetics, was the first to crusade against the over-use of medical, dental and shoe-fitting X-rays. (The latter is fortunately now largely discarded.)²

Ralph Nader has reported that: "The greatest source of man-made radiation . . . comes from medical and dental X-ray machines." Nader has charged at Congressional hearings that there is inadequate legal control of X-ray machines, and that most medical and dental schools do not teach their students the elements of safety in handling them. For example, he reported that only 30% of the 15,000 technologists in California have had formal training in a hospital or commercial school.³

Yet more than one dentist has insisted that the dental X-ray machine is harmless, supplying no more radiation than if one spent a few hours in the sunshine acquiring a suntan.

There is information to the contrary. The late Senator E. L. Bartlett of Alaska, as a result of Congressional hearings, warned: "Continuing exposure to small amounts of ionizing radiation from X-ray machines or radioactive materials may cause injuries that appear long after exposure has ended."⁴

Dr. Karl Z. Morgan, a radiation specialist, direc-

² Jack Harrison Pollack, *Ibid*

Also: Dr. Herman J. Müller with Jack Harrison Pollack, *Ibid.*

³ "Radiation Control for Health and Safety Act of 1967," U.S. Senate Hearings, Part 2, May 6-15, 1968

⁴ "Is Your Next X-ray Worth the Risk? ("Pageant, August 1968

tor of the AEC health physics division at Oak Ridge Laboratory, editor of *Journal of Health Physics*, and a member of the national committee on radiation protection, has agreed. He has stated that in his opinion, the greatest radiation threat, next to nuclear testing, is the ordinary medical and dental X-ray, the biggest offenders being dental X-rays as well as photofluorographic X-rays, used in mobile units which give chest X-rays. He adds, "There can be no threshold dose so low that the probability of serious damage is zero."⁵

In addition to untrained personnel as well as uninspected X-ray equipment which may be delivering uncontrolled amounts of radiation to the patient, Griffiths and Ballantine point out in their book, *Silent Slaughter*,⁶ the dangers of mobile X-ray units. They write, "Twenty-eight states . . . have absolutely no equipment requirements of *any* kind for mobile X-ray units, which X-ray tremendous numbers of people each year as they tour the country, and which are noted for their beat-up over-exposing equipment." Inspecting other X-ray machines showed that only 49% met the requirements.

Ralph Nader, after much research, has added, tersely, "It is shocking but true: 90% of all medical radiation is unnecessary."⁷

Whenever such disturbing information is released, the public is quickly assured by those involved that there is no need for concern; that the information is merely scare literature released only to press the panic button. For instance, one well known doctor wrote in his nationally known news-

⁵ Rapoport, *The Great American Bomb Machine*

⁶ Griffiths and Ballantine, *Silent Slaughter*

⁷ Ralph Nader, "Wake Up, America, X-Unsafe Rays." *Ladies Home Journal*, May, 1968

paper column, "After failing to see any signs of illness resulting from X-rays in adult patients or children, I can't get excited about a little radiation."

On the other hand, Dr. Karl Z. Morgan, mentioned above, believes that as many as 29,000 people may die each year in the United States as a result of medical and dental X-rays.⁸

What are the effects of X-rays? One medical journal states that while individuals may vary, sensitivity in some children may cause leukemia.⁹

Ralph Nader reported at the Congressional hearings¹⁰ that according to the dosage, the effects can include:

- skin reddening
- damage to bone marrow
- delayed cancer and leukemia
- cataracts and corneal opacities
- dangers to pregnant women, who are doubly susceptible because of the potential effects on the unborn child.

One study from Johns Hopkins University about 216 families, each with one mongoloid child, revealed that the mothers had had seven times as much irradiation from diagnostic, fluoroscopic and therapeutic sources as a control group of mothers.¹¹

A government bulletin admits other dangers: "Exposure of the thyroid of young children to X-ray, with subsequent thyroid disturbance, both malignant and benign, has been demonstrated in several studies . . .

"Induction of lens opacities has been recognized

⁸ Washington D.C. News Release, August 29, 1969

⁹ *New England Journal of Medicine*, July 20, 1972

¹⁰ "Radiation Control for Health and Safety Act of 1967," Hearings before the Committee on Commerce, United States Senate, Ninetieth Congress, Second Session, Part 2

¹¹ *Associated Press*, October 22, 1965

for many decades as a hazard of exposure to amounts of ionizing radiation . . .

"Low-energy (in TV type) X-rays cause cataracts as easily as higher energy X-rays."¹²

Further warnings appeared as recently as 1972, which were reported by the *Readers Digest*.¹³ The article repeats that exposure of women to X-ray during pregnancy is especially hazardous, but that doses should be lowered and the number of unnecessary exposures should be restricted for *everybody*. The article suggests that each person should ask his physician or dentist the following questions:

- Is this X-ray absolutely necessary to my health?
- Are any previous X-rays or other test information available which can do the job?
- If this X-ray is necessary, can the exposure be limited to the absolute *minimum*, both in size of radiation dose, and only to the part of the body under examination?

Fluoroscope examinations are also considered hazardous. According to Griffiths and Ballantine, in their book, *Silent Slaughter*, fluoroscopes are more dangerous than regular X-rays, because the machine is kept on longer during an examination, resulting in a dose 100 to 300 times higher than that from an X-ray machine. Because children are sometimes kept under the fluoroscope while parents are delivered a lecture by the doctor, these authors state: "This practice has been implicated in the tremendous increase in childhood leukemia . . ." Of

¹² "Radiation Bio-Effects," Summary Report, Jan-Dec. 1970, U.S. Dept. of HEW Public Health Service No. BRH/DBE 70-7

¹³ Fred Warshofsky, "Warning, X-rays May be Dangerous to Your Health." *Family Health Magazine and Readers Digest*, August 1972

course X-rays and television can bear a great deal of the blame as well. However, Marshall S. Little, Chief of Radiological Health in Washington, D.C. has admitted in the 1967 hearings that even five minutes of fluoroscopic examination had been found to produce radiation sickness. In schools, where students observe fluoroscopes and unshielded X-ray machines in science classes, there is great potential danger to them.

Dr. Eliot Corday, a cardiologist at the UCLA Medical School has reported that the fluoroscopic diagnostic procedure exposes patients to as much as 1,000 times the amount of radiation found in standard X-rays. It is good to know that on February 5, 1973 the New York City Department of Health decided to replace X-rays with tuberculin skin tests as part of routine examinations.

There is an alternative to X-ray machines, of which few people are aware. It is a camera or detector which uses infrared waves to detect the radiant energy or heat of various parts of the body. This is because every object in nature emits infrared energy as a function of its temperature. Thermography, as it is called, can be used, and is being used, successfully, in physical diagnosis, without side effects. It has been used in diagnosing breast cancer, extracranial cerebro-vascular disease, peripheral vascular disease, wound healing, arthritis, Bell's Palsy, stroke, burn evaluation, placenta localization, low back injury and other conditions. There are about 200 to 250 units, made by various companies, in use in the United States now. Others are in use abroad. The thermographic diagnosis is a "passive" process; no radiation is involved; no burns result. It is considered an excellent diagnostic tool.¹⁴ Although little is known about dental thermography, one

company, at least, has experimented with dental diagnosis.¹⁵

Arthur B. Green, commenting on Fred Warshofsky's warning on X-rays, wrote:

"Protection from X-ray is not hard to provide. One step is to use a collimator, usually a simple lead washer to restrict the beam to the exact size of film. This often means one quarter the width otherwise exposed. When X-rays of the chest, abdomen and spine are made, and the collimator is not employed—which is the usual case—the gonads (testicles and ovaries) are also exposed, and dangerously, and uselessly. Besides, when the aim is carelessly adjusted, the shot may miss the target altogether and the picture has to be shot over again. Too many X-ray operators incline to much wider exposure than necessary, to be sure of including their target."¹⁶

Dr. Karl Z. Morgan states that improved equipment and techniques could eliminate 90% of the X-ray radiation, whereas Drs. Ernest Sternglass and Donald Sashin, of the University of Pittsburgh School of Medicine, have found that a new method, known as electronic radiography, could eliminate practically all of the risk from medical X-rays.

Luminous Dials

Another man-made threat is luminous watch or bedside clock dials. As early as 1962, warnings were sounded against radium dial watches by Hanson Blatz, director of a health department Office of Radiation Control. These warnings were, in turn, re-

¹⁵ David H. Whittier, "Medical Diagnosis by Thermography," *Optical Spectra*, January 1970

¹⁶ Further information (medical monographs, etc.), is available from AVCO Corporation, 1275 King St., Greenwich, Conn. 06830

¹⁷ *The Layman Speaks*, October 1972

laid by the *Medical Tribune* in a world-wide report, December 14, 1962. The warning followed the discovery that workers in a luminous dial factory, who held a small paint brush in their mouths to apply the radium substance to watch dials, later developed radiation illness, followed by forty deaths.¹⁷ Director Blatz reported that these watches, later worn by the purchaser, give off 75 radiation units per year, about 159 times more than the amount considered "safe." If the watch is a pocket watch, or the wrist watch faces the body, wearers are exposed to greater amounts of radiation "which may do genetic damage to the reproductive system." As a result, a ban of radium dial pocket watches was ordered by New York City for February 1, 1963. Wrist watches were not affected by the ban, nor were bedside clocks which have a larger surface and emit greater amounts of radiation.

One family of seven in New Jersey sued a watch company, contending that the exposure to radioactive rays from a wrist watch had endangered all of them. The family's lawyer stated that the father, a naval lieutenant commander, had bought the watch in December, 1958 and had worn it until January 21, 1960, during which time radioactive Strontium-90 had leaked out of the watch so as "to make probable an untimely death from cancer or other lingering malady."

In December 1959, according to the lawyer, "the Atomic Energy Commission discovered and made public the fact that watches of the type involved contained excessive dosages of Strontium-90"¹⁸

Meanwhile, many people who took this report

¹⁷ Rapoport, *The Great American Bomb Machine*
Also: Linus Pauling, *No More War*. Dodd, Mead & Co., N.Y. 1958

¹⁸ *New York Times*, August 18, 1961

seriously, realized that if one carries a pocket watch or wears a luminous wrist watch which faces the body (and at night may rest near the face and eyes), or if a bedside clock faces the bed and its occupants, protective measures are necessary. They immediately asked a watch repairman to scrape the radium off the watch dials, and either turned the clock face away from the bed or discarded the clock altogether.

Food Irradiation

A shocking experiment is the atomic radiation of food—fruit, vegetables, fish, poultry, canned meat, bacon and other items, to prolong their shelf life. Irradiated ham was given on a voluntary basis to military personnel, and the experimenters assured the public that tests showed no health hazards at all. However, like most low-level radiation, results can be delayed. This was proved when animals fed the same irradiated foods given the military men began to exhibit stunted growth patterns as well as malignant and diseased blood cells. At present the AEC is experimenting on irradiation of seafoods, in spite of the fact that animal tests reveal that irradiated food can shorten their life span. Other countries are also playing with this deadly weapon, one that cannot be seen or tasted in foods.¹⁹

Not only is irradiated food a potential danger to those who eat it, but irradiation destroys vitamins and minerals, and many of the other protective nutrients in food. Fertility, growth and digestibility in those who eat it are also affected by irradiation. Paradoxically, although the aim of food irradiation is to prolong shelf life, the irradiation of fruits and

¹⁹ Cleeland Bean, "Irradiation - A Safe Way to Preserve Food?" *Here's Health*, August 1972

vegetables actually hastens the rotting process. The toxic effects for those who eat these foods have been proved. A monograph, published in Europe, called "Incalculable Health Risks by Food Irradiation," by Dr. Walter Herbst, carries 102 references of world renowned scientists who confirm the dangers of irradiating food.

The supposition is that although food products in this process are exposed to Cobalt-60, another radioactive isotope, the gamma rays merely penetrate the food, killing bacteria and fungus without turning the food radioactive. However, three Cornell University researchers have found that food preserved by nuclear irradiation is dangerous. They report that eating sugar which has been irradiated can produce the same genetic changes in humans as exposure to radiation itself.²⁰

I have seen the list of Atomic Energy Commission licensees²¹ issued for the use of nuclear isotopes for irradiation of foods and tobacco in the United States. There are a minimum of sixty-six companies plus thirty-three additional companies who manufacture and process drugs and hospital supplies and equipment. The list of these food processors, familiar to all of us because they produce or manufacture so many of the staples we constantly see on the shelves (though not necessarily yet irradiated) is alarming! What is in store for us? If these foods are foisted upon us, presumably to protect their shelf life, then we should, through our congressmen, demand that they be labeled so that we can protect ourselves and avoid them. It is certainly more important to protect people than the shelf life of a food. As it is, too many exemptions in food labeling

²⁰ *Nature*, November 27, 1965

²¹ Licensee List D: Licensees Entitled to Handle and Use Isotopes

are already allowed by the FDA. Irradiation must not be another. The law presently requires that irradiated food be so labeled. We must see to it that this law is enforced.

Microwave Ovens

I was unable to locate any conclusive information as to whether food cooked in microwave ovens can be radioactive. But there is plenty of proof of what microwave ovens can do to those who use them, whether they are in the home, restaurant, factory and college cafeteria, bowling lane, super-highway rest station, train, ship or plane. They are sold as being so "quick" and "convenient." Nothing is said about the danger to the persons exposed to the leaking radioactivity of some of the ovens while in use. Apparently there are some microwave ovens which *are* safe. If you already have one, or if you intend to purchase one, obtain proof that there is no leakage of radioactivity from the oven, and that the cut-off of power is operating when you open the oven door. Buyer beware!

Why? This information which follows comes straight from the studies of scientists whose work is reported and admitted by the U.S. Government.

There are two types of microwave radiation: thermal (heat) and non-thermal. Microwave ovens are the thermal type. Whichever the type to which one is exposed, the results can be cumulative and dangerous.

The parts of the body most vulnerable to microwave exposure are the gall bladder, urinary bladder, intestines, testes and eyes. Assurance is given that according to the size of the dose, the degeneration of the testes may be reversible. The damage to the eyes is not reversible, as the following statements show:

"Microwaves from thermal sources have been shown to produce cataracts in a variety of experimental animals."

"Cataracts due to microwave-induced damage to the lens is usually irreversible. Microwave cataracts may result from a single exposure or develop from repeated exposures."

"At low exposure levels, cataract formation was delayed."

"Rabbits with alloxan-induced diabetes were more susceptible to microwave-induced cataract formation than were non-diabetic rabbits."

"If either the power density or the duration of the irradiation is below a certain threshold value, then the damage done to the lens is not irreparable and recovery can occur, *provided sufficient time elapses* before a subsequent similar episode." [Emphasis supplied]²²

Apparently some microwave ovens cause coagulation of the eye lens protein. "When the cells making up the lens become damaged or die, a cataract usually forms. Thus it is not unusual to find cataracts developing many years after . . . the original injury."²²

In one study, it was noted that "opacities occurred after a 60 minute or longer exposure . . . 45 minute exposure had no effect."²²

From another government bulletin²³ comes the disquieting information that microwave oven repair should be recognized as hazardous work. Persons attempting to repair microwave ovens are subject to acute damage from sudden high levels of exposure. Power density measurements around micro-

²² "Biological Effects and Health Implications of Microwave Radiation." Symposium proceedings, Medical College of Virginia, with the support of Bureau of Radiological Health, U.S. Department of Health, Education and Welfare, No. BRH/DBE 70-2 and Congressional Hearings, Part 2, May 6-15, 1968

²³ *Ibid*

wave ovens with outer cabinet panels removed indicated potential exposure.

"Repairs are attempted by microwave oven owners, radar technicians, electronic servicers, electrical appliance repairmen, restaurant equipment suppliers' service personnel and food vending firms . . .

"Corrective measures should include the provision of adequate training regarding microwave hazards, utilization of microwave detection equipment, protection of clothing, and eye protection. The development and use of personnel monitoring . . . for the provision of periodic physical examination, including extensive eye studies, for all microwave repairmen would provide indication of exposure levels. Shielding and warning labels for microwave tubes would provide further hazard reduction."²³

Federal radiation experts reported that because many ovens already in use may be a potential health threat, especially to the eyes, the government planned in 1970 to issue regulations limiting the radiation leakage from microwave cooking ovens before too many new units were sold. John C. Villforth, director of the U.S. Bureau of Radiological Health, said: "We are proposing a standard of 1 millowatt per square centimeter, two inches from the oven door at time of manufacture. And we are recommending that no product should deteriorate throughout its useful life so that leakage would exceed 5 millowatts per square centimeter."

Yet, as previously mentioned, one expert has said: "The *safe* radiation dose is zero."

Villforth added, "many of the ovens we have tested in the laboratory were leaking in excess of

²³ "Electronic Product Radiation and the Health Physicist," Health Physics Society. Fourth Annual Midyear Topical Symposium, U.S. Dept. of HEW, Public Health Service, Environmental Health Service, No. BRH/DEP 70-26

those recommended as standard, with some radiating dangerous microwave energy in excess of 200 millowatts."

In March, 1973, Consumers Union, publishers of *Consumer Reports*, which reaches two million subscribers, charged that all microwave ovens leak radiation, and as proof demonstrated how this leakage is strong enough to light up a 6-inch fluorescent tube. This information was released at a news conference, with the full report which followed in the April 1973 issue of the C.U. publication.

Consumers Union engineers said that all 15 models (from various companies) emitted low-level radiation through doors and other areas. At times the leakage became relatively high.

Due to stepped up advertising, 100,000 microwaves were sold in 1971; in 1972, 200,000. More than 700,000 ovens are now in use, according to the C.U. report, which sounded these safety warnings to those who already owned microwave ovens:²⁴

- Keep the ovens as clean as possible.
- Unplug them when not in use.
- Keep children away from them.
- Remain several feet away while food is cooking.
- If you wear a pace-maker, beware of the microwave ovens which can interfere with heart devices.
- Remember that the eyes are particularly vulnerable to this form of radiation. Other health damage, particularly in the nervous system, may result from exposure.

Griffiths and Ballantine state in their book, *Silent Slaughter*, that though there are attempts to set up leakage standards by the Public Health Service, "The manufacturers cannot build an oven which will not leak with age." A recent report in

²⁴ *Wall Street Journal*, March 3, 1973

early 1973 states that the University of California has found that TV waves and "unshielded microwave ovens" have been implicated in failures of pacemakers used by heart patients.

These authors further state that there is danger in two forms of man-made radiation: nuclear medicine (such as Isotope-131 "cocktails") and Laser beams.

Laser stands for *Light Amplification by Stimulated Emission of Radiation*. According to Harold F. Stewart, of the Southwestern Radiological Laboratory, Public Health Service, "All lasers have a potential for causing damage to individuals." And according to James G. Terrill, Jr., former director of the National Center for Radiological Health, home-built kits are capable of blinding people.

Lasers can also bore a hole through the hardest mineral substance known to man: the diamond, and they have shot down a plane with a single burst.

Now let us look at fluorescent lighting and color TVs.

5 Other Hazardous Appliances

Fluorescent Lights

FLUORESCENT lights are one source of an ionizing type of radiation. Dr. John N. Ott, chairman and director of the Environmental Health and Light Research Institute, Sarasota, Florida, which is co-directed by a medical and scientific advisory board, has done more research on the effects of fluorescent lighting than any other present investigator. Dr. Ott initially was the photographer of those wonderful time-lapse films made for Walt Disney. These movies showed a gentle and gradual opening of flowers taking place within a few minutes, whereas the natural process had actually required many days or weeks. In the course of his unusual photography, John Ott learned many surprising and unexpected things. Sometimes, while the camera was waiting to record the gradual stage of growth of a bud (which during cold weather had been transferred from the outdoors to a greenhouse) the bud would fall off and the film was temporarily doomed. Dr. Ott finally learned that the trouble was due to the type of artificial lighting on the plant. Natural light presented no problems, but artificial light in a greenhouse, including fluorescents in various colors, interfered with the plant's growing cycle to a greater or lesser degree.

Follow-up investigations showed that artificial light in animal breeding rooms also interfered with the actual breeding, whereas under natural light there was no problem. Under fluorescents of different colors, the survival rate of mice born in the breeding rooms was highest under natural light, but lower under various colored fluorescents. As the color of the lights deepened, survival declined noticeably until the lowest survival rate occurred in mice exposed to pink fluorescent.¹

Under pink fluorescent lighting, tails of the animals became spotted, developed sores, even gangrene. Under some colors of fluorescents, the animals lost much of their fur and became irritable and quarrelsome. When some of the mice were transferred to natural light, the symptoms gradually receded and the animals returned to normal.

Dr. Ott learned later that humans, too, can react in a similar manner to certain fluorescents. In a radio station, pink fluorescent lights were installed. The staff became so irritable and quarrelsome that work output was greatly affected and some of the personnel threatened to quit. Someone, noting that these conditions had begun when the pink fluorescents were installed, suggested their removal. Almost immediately the unpleasant conditions ceased and the morale became normal once again.

As a result of his studies, Dr. Ott finally was instrumental in encouraging a full-spectrum fluorescent tube called *Vita-Lite* to be manufactured by the Duro-Test Corporation, North Bergen, New Jersey.² (This firm has no financial connection with Dr. Ott or the Environmental Health and Light Research Institute.) Dr. Ott feels strongly

¹ Ott, *Health and Light*

² Write to the Duro-Test Corp. for name of nearest distributor.

that there should be scientific supervision in lighting homes, schoolrooms, offices and factories. These should be lighted with either incandescent lights or the new-type natural light fluorescents containing the full spectrum.

His concern is not unfounded. Autopsies on animals, according to Dr. Ott's extensive laboratory investigations, revealed that animals exposed to natural light had healthy hearts, whereas those exposed to pink fluorescents had developed calcium deposits and inflammation of the heart muscle.³

Animals reacted differently under different colors of fluorescents, showing stress, and in some cases development of tumors, but Ott says: "It is interesting to note that the most extreme adverse conditions regarding not only tumor development but also necrosis of the tails, calcium deposits in the heart tissues, smaller numbers in the litters, and difficult behavior problems, were all caused by pink light."⁴

By comparison, he adds, "the full spectrum of natural light . . . is known to be of direct benefit to man."⁴

Dr. Ott believes that we are all living behind non-natural light-admitting glass too much of the time: windows, windshields, eyeglasses, especially tinted or dark glasses, which have been associated with serious eye and other problems, including glaucoma, near-blindness, arthritis, etc. Dr. Ott tells of his own experience, of failing vision and arthritic symptoms which were enormously relieved when he took off his sunglasses altogether, wore his eyeglasses as little as necessary, and exposed himself and his eyes to normal, outside daylight.⁵ This

³ Ott, *Ibid*

⁴ Ott, *Ibid*

⁵ Ott, *My Ivory Cellar*

led to his urging the Armorlite Lens Co. of Burbank, Calif. to develop a full spectrum plastic lens for eyeglasses.

There is speculation that fluorescents rob the body of Vitamin A, needed for good vision. Perhaps it is only my imagination that in the bank where I do business, many of the employees working under the merciless fluorescents complain of eye problems, find that they need glasses for the first time, and sometimes complain of headaches which disappear when they seek employment elsewhere. There is also speculation, though not proof, that fluorescents may contribute to cataracts. A relative of mine who developed cataracts which required surgical removal, told me that her eye trouble began when she started working in an office equipped with fluorescent lights.

Dr. Ott's research of the effect of fluorescents on health, vision and the nervous system may eventually prove a boon to mankind. Fortunately, the natural type of fluorescent bulb, which can be slipped into any fluorescent fixture, apparently removes much of the hazard of this type of exposure (*see above*).

Color TV

You have heard of the condition called "tired children." *Time* magazine publicized it in an article^o after two Air Force physicians discovered that there were no other explanations of symptoms of thirty children who were complaining of headaches, insomnia, nervousness, continuous fatigue and vomiting. The doctors finally learned that these children watched television from three to six hours on weekdays, and six to ten hours on weekends.

^o *Time*, November 6, 1964

When parents cooperated with the request for total abstinence from TV, results were dramatic. In twelve families where the rule of total abstinence was enforced, symptoms disappeared in two or three weeks. In eighteen families where parents cut TV viewing to two hours daily, the symptoms did not disappear for five or six weeks. In eleven families where the parents finally gave in and relaxed the rules entirely, allowing the children to return to their usual time watching TV, the original symptoms also returned.

Epileptic seizures in some children have been reported due to the flicker from the TV sets.

Dr. Carl Braestrup, a registered X-ray physicist, tested the amount of radiation of black and white TV sets at the request of the Electronic Industries Association. He found that TV definitely emits radiation, although the cabinet and safety glass act somewhat as deterrents. The guarded conclusions of Dr. Braestrup indicated that industry was trying to lower the amount of radiation from TV, but according to the experts, the only really safe dose of radiation is none. Viewers of *any* TV set were warned to sit from six to ten feet away from it.⁷

Dr. John Ott conducted tests with plants and animals to learn exactly what results would occur from TV radiation. There were abnormal results in plants. Rats first became hyperkinetic (over-active and aggressive) within three to ten days and then became so lethargic it was necessary to push them to make them move.⁸

The results from exposure to color TV were especially alarming. The animal breeding program, successful for two years, "was completely disrupted"

⁷ Clark, *Stay Young Longer*, chap. 10, p. 360, appendix

⁸ Ott, *Health and Light*

upon exposure to color TV. All of the young rats in one of the cages died within ten to twelve days.⁸

People are threatened, too, by exposure to color TV and Dr. Ott says: "Of 30 million color TV sets sold through 1969, about 25 million are still operating and many will last for years . . . six million sets will be sold this year."⁹

Ralph Nader told the Senate Committee during the Congressional hearings about the danger of color TV: "Millions of people are being exposed to the risk of physical, genetic and eye damage."¹⁰

The reason why color TV is more dangerous than black and white TV is because it emits a higher voltage of radiation. In 1967 one company recalled 154,000 color TV sets which were improperly shielded. But later investigations found that the problem of unsafe color TV was not limited to that one company but common to 27 manufacturers.¹⁰ Many of these have not been recalled and are still spilling out excess radiation. Even newer machines or controls to establish a "safe" level of radiation have not solved the problem. Tissue, organs, bone and eyes are being bombarded by radiation from color sets.

For example, Dr. H. D. Youmans of the Bureau of Radiological Health was skeptical about the deleterious effect of TV. He said: "We questioned whether TV radiation was important, because it is so low compared to the out-put of an X-ray machine . . . we thought the rays would be soft and non-penetrating.

"Instead, we found rays escaping from the vacuum tubes to be harder and of higher energy than we expected. They penetrated the first few inches of

⁸ Ott, *Health and Light*

⁹ "Color TV Isn't Safe Yet." *Prevention*, December, 1970

¹⁰ *Wall Street Journal*, February 2, 1968

the body as deeply as 100 kilovolt diagnostic X-rays. You get a uniform dose to the eye, testes and bone marrow."¹¹

Dr. Ott points out that because color TV often overshoots the high voltage usually required by its performance, excess radiation can build up and escape from all sides of the set as well as the bottom if shielding is not sufficient. "The main difference between black and white and color TV," he explains, "is that the black and white sets have only one cathode gun, whereas a color set has three cathode guns, one for each of the primary colors; color TV generally operates on a higher voltage rate than the black and white sets." He warns that radioactivity from a color TV set backed up against a wall behind which a baby's crib is located, can easily penetrate the wall and become a danger to the child. This is believed to have actually happened to a little girl who became ill and had been sleeping in such a location. One woman in Pompano Beach, Florida, reported that three cats died of anemia during a four year period; all had a habit of sleeping on top of her color TV because of the warmth.¹²

Recent reports state that hyperkinetic children, a growing problem in this country, have been linked with over-exposure to TV. Although there have been attempts to regulate the amount of radiation emission from TV sets, the situation—and danger—have not at this date been effectively eliminated. There is hope that there may be some action in 1973. Meanwhile, many families own old sets or sets which have not been repaired and/or have been found to have measurable amounts of X-radiation.

¹¹ Ott, *Ibid*

¹² *Chicago Tribune*, Feb. 18, 1968

Even some sets that have been fixed are not perfect and, as stated before, even new machines may give out more radiation than is safe.

Again, it is Ralph Nader who has charged: "The Radiation Control Act of 1968 is not working to protect millions of unsuspecting TV viewers from unacceptable levels of radiation emissions. It is clear that the government has chosen to assume the role of protecting the electronic industry's investment vis-à-vis the offending color TV sets now in American living rooms . . . the forces of industry and bureaucracy have prevailed." Griffiths and Ballantine, in their book, *Silent Slaughter*, point out that, "A television set is a low-voltage X-ray machine." Furthermore, most people seem to believe that the radiation from the set is emitted from the front only. It is true that someone who is fiddling with the knobs and controls while the set is turned on, or is sitting closer than eight feet in front of the picture, is getting a large dose of radiation; but as these authors point out, X-rays emanate from the sides and the bottom of the set as well! They add, "People sitting to the side of the set may well be exposed to these levels, which are tens, hundreds, thousands of times higher than those used in the Bureau of Radiological Health calculations."

Actually it is now known that these rays can penetrate a thin wall into another room. TV rays can also penetrate the floor where children are lying watching a program; or even in an apartment building, reach people in the apartment below. Griffiths and Ballantine believe that no device which emits harmful X-rays should be allowed in 30 million homes and they add, "there has never been any reason why television sets should give off any X-rays whatsoever—aside from the manufacturer's carelessness."

Some airports are now installing TV sets on arm-chair rests in waiting rooms. This brings the TV to a foot or less away from the observers, many of whom are children.

A sudden and recent breakthrough for protection from color TV has occurred. John Ott has been greatly concerned not only with the danger of radiation from color TV, but with apathy toward public protection. Standards for safety levels have been changed eight times. Dr. Ott states: "Each time they thought that a safe level had been defined, but each time it had to be cut further. Safety levels again will have to be stiffened drastically." Whether TV manufacturers will heed the latest standard remains to be seen. Dr. Ott notes that the TV industry feels that the sets are within the safety standards already set, so why do more? He adds, "much depends on public interest as to whether or not the manufacturers will listen and act."

Meanwhile, Ott, long a crusader for safety in this field, has taken matters into his own hands. He has patented a TV radiation shield. The invention is a special mirror which reflects the picture so that the viewer need no longer look directly into the cathode ray gun of the picture tube but into the mirror instead. According to Dr. Ott, this device eliminates the effect of X-ray radiation of the TV set on the viewer completely. He has also applied for a patent shielding the ends of fluorescent tubes which apparently "leak" some form of radiation, causing abnormal conditions in animals exposed to the fluorescents. (Studies have not yet been reported on the effects in humans.)

Dr. Ott notes that there have been many discouragements in the crusade for safety in man-made radiation devices. Hopefully, the new patents will

change all this. Dt. Ott says optimistically: "The whole wall of resistance is crumbling now."

But the public will have to back up these attempts for their protection before widespread success will become evident.

In the interim, until safety is assured, *Prevention* magazine has supplied guide lines to protect you and your family from the dangers of color TV:

"—Don't indulge in color TV. If you have a set already, trade it in.

"—Keep your set's voltage down—don't allow your TV repairman to step it up in order to get a brighter and sharper picture. In the surveys made of color TV sets, this practice by repairmen was found to be a major reason for excess radiation, sometimes rising as high as 150 milliroentgens.

"—View TV from a distance—at least six feet. Don't let the little ones crowd in close as they so often tend to do.

"—Remember that radiation penetrates walls and floors. Are the kids playing in a low-ceilinged basement right under the living room TV? Is the baby's crib separated only by a wall from the back of the TV set in the adjacent room?

"—Strictly limit your family's viewing hours to programs you *really* want to see. Remember that TV addiction is triply deadly—to the intellect, to the body's physical well-being through lack of exercise, and because of the X-ray emissions whose deadly role we are only beginning to appreciate."²⁸

²⁸ *Prevention*, December, 1970

6 Microwave Towers

IN July, 1969, the United States had 71,524 microwave towers.¹ The number is increasing rapidly.

Microwaves do not give off nuclear radiation (as a bomb or power plant does), but transmit electromagnetic energy into the atmosphere. In most cases a microwave tower is used to relay some form of information: TV, FM and AM radio, telephone and data communications, radar, etc. We have already looked at microwave ovens, which are small but powerful units which produce electromagnetic energy at high levels, and we have seen the effects of leakage of this energy. What about the effect of other forms of microwave exposure?

A group of scientists, convening in Winnipeg, Canada, for the fourth Canadian and Biological Engineering Conference, have foreseen microwave radiation as being a serious problem in the future, and believe that research is important *now* to forestall it. Already, laboratory tests reveal that rats and chickens show that low-energy, long-term microwave radiation effects the nervous systems, causing agitation and disorientation.²

¹ "A Partial Inventory of Microwave Towers, Broadcasting Transmitters, and Fixed Radar by States and Regions," U.S. Dept. of HEW, Public Health Service, Environmental Health Service, BRH/DEP 70-15

² "Microwave Hazards Studied at Queens University," *Free Press*, September 12, 1972

Even though microwave towers are claimed to be well shielded (as microwave ovens are claimed to leak little energy) proliferation of both forms of microwave radiation may well require more rigid protective standards for health.²

Few people realize that the United States, as well as other countries, is being proliferated with microwave telecommunication towers. The towers are quietly put up and those who notice them, if they do, believe they may be just another telephone structure, and think nothing of it. Yet the electromagnetic energy produced by these towers, which are multiplying like rabbits, can under certain circumstances, impinge upon the body and be absorbed both by the body surface as well as by deep-seated organs. They may also cause cataracts, even though heat (such as in microwave ovens) may not be involved. Some investigators call these non-thermal sources of microwave "athermal," but the damaging effects may apparently occur whether or not the microwave source is thermal or "athermal."

Dr. John Heller, of the New England Institute for Medical Research, found that radio-frequency waves, which produce no discernible heat, caused cell and organism changes which usually were considered traceable only to ionizing radiation such as X-rays and nuclear radiation.³

Soviet research has found that chronic exposure to low-level athermal microwave energy can produce the following results:

- an increase and decrease in heart rates
- a disturbed nervous system—especially the autonomic system which controls the vital organs
- an increase of the histamine blood content (histamines often show up as allergies)

³ *Science News*, Vol. 96, p. 276

- increased activity of the thyroid gland
- imbalance in body hormones
- chromosome damage

Other symptoms which result from athermal microwave exposure include:

- extreme tiredness
- constant or periodic headaches
- sleep disruption
- memory problems
- pains in heart region
- fainting
- shortness of breath or labored breathing after physical activity
- decrease in appetite
- brittle hair
- a decrease in sex potency
- increase in irritability
- changeable moods
- anxiety
- hypochondria
- a possible action upon the brain

All of these disturbances have been reported by the Soviets as a result of innumerable studies.⁴ Consequently, Russian microwave standards are so strict that if they were adopted by the U.S., they would hinder TV transmission.

One investigator reported, "Microwave generators of the type used in present-day radar and television transmitters, and the much more powerful generators envisioned in the future, generate several types of radiation which offer potential hazards to the life or health of personnel . . . Various wave bands used in radar, in long distance telephones and in TV signal relays are included in the microwave group . . . Frequency of the radiation is an im-

⁴Terri Aaronson, "Mystery." *Environment*, Vol. 12, No. 4

portant factor . . . Microwave energy is readily absorbed through the skin and underlying tissues.”⁵

The amount of danger resulting from exposure to microwave towers apparently depends on three factors: The distance from the tower; the amount of power generated by the tower, and whether or not one is in the direct pathway of the radiation. Personnel who work with such equipment are warned never to cross in *front* of the antenna, nor to get close, since almost instant damage may occur at that distance. On the other hand, apparently those who live a half mile from a tower are exposed to much less radiation, whereas those living a mile away would presumably receive no radiation at all.⁶ The Soviets believe that slight disturbances resulting from athermal microwave radiation may disappear after exposure has ended. However, re-exposure may bring a return of the problems.

An acquaintance with an old eye injury, which is normally quiescent, finds that when she is driving on a freeway and passes one of these microwave telecommunication towers, the eye lesion, just on the brief exposure from passing by the tower, is reactivated; sensitivity and pain return. Yet most people are completely unaware of the existence, as well as the effects of this ever-growing number of towers now located widely on hills, by roadsides, in fields—everywhere! Birds become disoriented when they wander into a microwave path, escaping as quickly as possible and avoiding it thereafter. The birds' feathers act as antennae, which pick up the microwave radiation, transferring it to their bodies.

⁵ A. W. Richardson, "Biologic Effects of Non-Ionizing Electromagnetic Radiations," *Scientia*, Sept.-Oct. 1968, (French Publication)

⁶ "Radiation Bio-Effects," Summary Report, Jan-Dec. 1970, U.S. Dept. of HEW, Public Service, BRH/DBE 70-7

To give you an idea of some catastrophic effects of microwave towers, which can happen, here is a description verbatim from a Canadian newspaper, which was reported on location:

Microwaves: The Big Unknown
by Heather Chisvin

Manitoba farmers who claim radiation from microwave towers is doing irreparable damage to their poultry, foliage, and families, can expect some hard, scientifically-backed explanations by the end of this summer.

For almost five years now. Dr. M. A. K. Hamid, associate professor of electrical engineering at the University of Manitoba, has been working on the problem of what effect the radiation from these towers has on nearby farms.

"Although the energy is directed so that very little is spilled over to the ground, there is no doubt that some of it reaches living beings," he said. "We have to discover what the effect is.

"We have to be able to predict what will happen in the future with the expansion of these towers. The problem is, just how far we can go."

Although Dr. Hamid says most of the towers are enough removed from farms so the radiation exposure is 1,000 times less than is hazardous to human beings, exactly what happens to poultry and animals isn't definite yet.

He says he's checked the situation on a Stony Mountain farm where owner Victor Assels claims radiation ruined his poultry business.

"His farm is in a closer range than most, so I'm not sure, but I tested five broilers like his with radiation one million times stronger than he's getting. I did this for two months, day and night.

"The only thing I found was they were drinking water at an enormous rate. There were no other abnormalities. Egg production pattern and everything else stayed the same. But this was only an exploratory test. We have to do many more to make sure," he said.

Dr. Hamid says the results, which should be partially ready for presentation to the government and communications industries by the end of this summer, might even show that radiation can have a beneficial effect on production.

It has already been noted that certain plant growth can be greatly accelerated with radiation. Perhaps some combinations of radiation frequency and intensity could produce better layers and improve the feed-conversion ratio, he says.

But Manitoba farmers, backed by the Manitoba Farmers' Union and Environmental Measuring Consultants, aren't buying any of this.

They claim the provincial government and communications industries are giving them the runaround and refusing to acknowledge the fact that radiation is slowly, with a fatally cumulative effect, killing off their livelihood and even affecting the farmers themselves.

"We can see the writing on the wall," says attorney Harold Simkins of EMC. The effects of radiation are being felt by foliage, poultry, and the people themselves.

Victor Assels and his Stony Mountain poultry farm, once one of the largest in the province, is just a case in point, says Mr. Simkins.

Mr. Assels' farm was slated to be sold on a mortgage foreclosure because he could not repay a loan from the Industrial Development Bank.

But it was left unsold because the only bid submitted was below the reserve bid of \$63,320 put in by the bank.

"I didn't realize until April of last year that my problems did not start until a CP telecommunications tower was installed in the fall of 1962," Mr. Assels said in a telephone interview.

"The poultry became hysterical and cannibalistic. They were full of eggs but refused to lay and they were eating abnormally.

"And my family has felt the effects, too. We're suffering from fatigue, headaches, nausea, and restlessness," he said.

"Tests made by the university as reported by Dr. Hamid are completely invalid," he claims.

"There has been no honesty in this matter at all.

The whole thing is being whitewashed by the government, the university and the communications people themselves.

"They say this can't happen theoretically and refer to a safety level that has long gone out of date. I've lost a lot of money now," he says. "But the money is nothing compared to the obvious effects."

Mr. Simkins says Mr. Assels' case is not isolated.

He says many farmers are spending \$7,000 to \$12,000 a year on medical supplies, but the problems keep recurring. The same destroying element counteracts the medication.

Hutterite colonies, some of the largest turkey farms in the province, are losing turkeys by thousands. Mr. Simkins says 45,000 to 50,000 turkeys were lost last year, and it looks like the same thing is going to happen this year.

"The universities can't seem to find the solutions. The turkeys are fine when they're locked up in the barns at nights. When the farmers get up in the morning, the birds can't stand up. And they don't recuperate."

Trees and shrubs are dying, too, he says. "It's strange that they're dying from the top instead of the bottom, isn't it?" he asks. One city example near a tower is on Selkirk Avenue and McPhillips Street.

And people aren't immune, either, he claims.

Mr. Simkins says the effects of too much radiation on human beings is known and some of these are being felt by farmers in the microwave tower ranges.

He tells of one child living north of the city who is two years older and can't walk. "It's been classed as muscular weakness but hasn't been able to be overcome. A lot more people seem to be suffering from arthritis, too," he says.

Says Mr. Assels, "The truth has to come out."

Anyone who attempts to warn the public of the dangers of microwave towers (or nuclear plants) is muzzled in some way. A respected eye surgeon and microwave scientist, Milton M. Zaret, M.D., cru-

sading against the dangers of microwave radiation, abruptly lost his research contract with the Navy, because he publicized the results of his revealing studies. This doctor told a microwave conference at the Walter Reed Institute of Research that at least 10% of the workers exposed to excessive microwave radiations for long periods develop cataracts, tumors, gland disorders, and that death may even result.⁸

A government bulletin⁹ cites a case history of a technician who developed cataracts from continuous exposure to a microwave apparatus. The 32-year-old man operated the apparatus more or less continuously during his working day, with his head exposed to the antenna horn. Part of his assignment was to cross the radiating beam many times a day and stick his hand into the antenna horn to gauge the heat in order to determine if the apparatus were radiating power. His left eye was exposed more often to the apparatus than his right eye.

He began to complain of blurred vision and was soon found to have developed bilateral cataracts in his left eye which required surgery for removal. The physician who described this case, complete with charts of the afflicted eye, admits that the report was delayed due to "security restrictions."

However, this silent type of radiation and its effect is coming to light as permanently disabled Air Force and Navy personnel claim they are dying testimonies of its insidious danger. They are beginning to speak up, before they die, to anyone who will print their story (and it usually is not a nationwide release.)

⁸ Rodale's *Health Bulletin*, August 21, 1971

⁹ "Electric Product Radiation and the Health Physicist," Health Physics Society, Fourth Annual Midyear Symposium, U.S. Dept. HEW, Public Health Service, Environmental Health Service

One man, in Gardiner, Maine, whose story was printed by his hometown newspaper,¹⁰ told how he became disabled during World War II:

"When we took turns at guard duty on raised, unprotected towers, only a few yards away from the microwave transmitting antenna, we received almost three billion (pulsating) 10 centimeter waves (critical) at full body radiation . . . Now I have a massive hernia, along with tumors and skin cancer, degenerated testicles, eye and gland troubles, legs with scars, varicose veins above the ankles, a shin bone with a growth, arthritis, temporary loss of vision . . . I became permanently disabled after five years . . . My next door neighbor is also a radar veteran with multiple disabilities, like myself, from overexposure to military radar . . . There must be thousands like us, not located, as a tight lid has been kept on this information.

"So are civilians working close to antennas (similarly exposed) . . . Russia has reduced her radar men's exposure to microwave by a factor of 1-hundredth of ours.

"We deprecate its use because government, business, and some scientific interests find it expedient and pragmatic to ignore our sufferings."

Jack Anderson has reported a story of an Air Force radar technician flying in special planes (along with several other former crewmen), a World War II veteran who retired in 1966. He has developed cataracts apparently due to repeated microwave radiation aboard these planes.¹¹

The same reporter later noted that Disabled American Veterans have charged that: "It is known that radar emits both X-ray and microwave radiation which are harmful to humans . . . and produce cumulative delayed effects which may not appear for months, or even years after exposure."¹²

¹⁰ *Maine Times*, June 9, 1972

¹¹ "Merry-Go-Round," March 7, 1971

¹² *Ibid*, July 31, 1971

The fact that danger is known, by the authorities, is proved by a picture released by AP wirephoto, February 12, 1970. Five telephone linemen are shown wearing helmets and aluminized mesh face screens for protection against "possible radiation" while working on microwave radio towers. They are also each pictured carrying a bazooka-like contraption which carries radio signals from an antenna down a microwave tower to an amplifier in a building below.

In case you wish to know the number and location of microwave towers in the U.S., you can order a publication (ask for the most recent issue) called, "A Partial Inventory of Microwave Towers, Broadcasting Transmitters and Fixed Radar by States and Regions," U.S. Dept. of HEW, Public Health Service, Bureau of Radiological Health, Rockville, Maryland, 20852. You will be startled at the incredible number of microwave towers represented by white dots on a black background within each state. The title, "A *Partial* Inventory. . .," of this government publication is revealing. It is almost impossible to keep up with new installations. The number of towers is increasing wildly, as the following news release for 11 states only, shows:

Network Wins Microwave Approval

Southern Pacific Communications Co. announced today it has been granted permits by the Federal Communications Commission to construct the first segment of a proposed 11-state common carrier microwave network.

The FCC permits will enable the company, a wholly owned subsidiary of the Southern Pacific Co., to construct 19 microwave stations between San Francisco and Los Angeles at a cost of \$3.4 million. The company expects to complete the work in nine months.

The planned 11-state system will stretch from Seat-

tle to San Diego and from Los Angeles to East St. Louis with service to intermediate points such as Phoenix, Tucson, El Paso, San Antonio, Houston, Dallas-Ft. Worth and Pine Bluff.¹⁸

Hazard from radiation in other forms includes laser beams (admitted by government reports) and other radar devices—of major concern to many working in factories and laboratories.

Last, but far from least, is the nuclear plant threat—another growing and frightening menace. We will look at these next, after which we will discuss remedies for radioactivity.

¹⁸ *Associated Press*, August 21, 1972

7 The Height of Folly: Nuclear Plants

I have been told how the public is first introduced to an intended nuclear plant construction in a new community. My informant explained to me that a representative of a power company asks to speak to a service organization in the chosen area—Kiwanis, Lions, Rotary Clubs, or whatever. He then asks his audience if they are interested in having a “clean atmosphere.” All hands presumably go up. He next asks if they are anxious to lower their tax rates and monthly utility bills. Hands up again. Then he warns that the supply of gas is dwindling and *some other form of power* must be found *immediately* in order to avoid a crisis. You’ve guessed it, he means a nuclear power plant! At this stage he concludes, sometimes in a sarcastic tone (I am told), that there have been warnings of dangers of a nuclear plant, and he ends his pitch with such a statement as: “How silly can one get? Danger from a wonderful invention of the future which will outmode all previous forms of power?”

The club members have now been reduced to putty and would not dare block the construction of such a plant for fear of appearing foolish and behind the times. Mission accomplished!

But there is another side of this nuclear plant story which is being kept from you. Before you make up your mind either way, at least listen intel-

lignently to what the nuclear *scientists* (not the commercial power companies) have to say. According to these scientists, who have made a thorough study of the perils of nuclear reactors, there are two types of potential danger: An accident in a nuclear plant; and a day-to-day contamination by radioactivity of the atmosphere in the immediate and surrounding vicinity of a nuclear plant.

To give you a quick idea of the first danger, nuclear power plant accidents have already occurred in several countries in spite of extreme precaution, but have been given little publicity. A most important U.S. Atomic Energy Commission study, almost unknown to the general public, is the *Brookhaven Report*, compiled in March, 1957, by a group of U.S. atomic experts. This report estimated the possible results from a *maximum* accident under adverse weather conditions to a 500 megawatt reactor (reactors of 1,000 to 2,000 megawatts were later planned), and the theoretical consequences which could follow. The report could read:

- Killed—3400
- Injured—up to 43,000
- Persons evacuated—460,000
- Agriculture area contaminated—10,000 to 150,000 sq. miles
- Property damage—up to \$7 billion

Note this last item carefully. The U.S. legal, “no recourse” limit to total insurance liability, private and federal, for any nuclear accident is now fixed at only \$560 million, not anywhere near \$7 billion, by the Price-Anderson act, which extends from 1965 to 1977.¹

There was a minimum type accident in the AEC

¹ Hearings, Joint Subcommittee on Atomic Energy, 89th Congress, June 22-24, 1965

national reactor station near Idaho Falls, Idaho, January 3, 1961. It was a small reactor, but it apparently blew up with great violence, wrecked the containment building and resulted in the death of three reactor operators. The accident took place at 9:01 P.M. There was no fire or smoke since radiation cannot be seen, felt or heard. Yet at 10:25 P.M. a class one disaster was broadcast over the NRTS radio network. Instruments recorded the dangerously high radiation levels. The three victims were removed from the premises by personnel garbed in protective clothing with the allowed working time for removal of the bodies limited to one minute. The victims, aged 22, 26, and 27, posed a real disposal problem. Their bodies will long be radioactive. At the time of the report, two weeks after the accident, the decision had not been made. Alternatives being considered were burial in lead coffins in some secluded area, or consignment to the sea.² (Cremation does not solve the problem since ashes also retain radioactivity indefinitely.)

As Dr. Edward Teller, considered the father of the hydrogen atomic bomb has said: "In principle, nuclear reactors are dangerous and do not belong on the surface of the earth."

It is true that an atomic reactor accident may not happen in your area, yet 270 various types of accidents involving nuclear plants are said to have already taken place since 1945.⁴ But the daily cumulative effect of the radioactive contamination produces an undeniable effect on everyone in the area of a nuclear plant, as you will see.

² *Mapleton Environmental Protective Association Newsletter*, Midland, Michigan, 48640

³ Sheldon Novick, *The Careless Atom*

⁴ Leo Goodman, Former Secretary of the AEC Technical Committee, AFL-CIO, List No. 13, January 30, 1967

[It is interesting to note that: "Standards for permissible levels of exposure to radiation are ten-fold higher for employees than they are for the general public."]⁶

The first example is written by Mary Hays Weik, a courageous battler against atomic plants. She is secretary of the New York City Committee to End Radiological Hazards, an independent, non-partisan committee of private citizens concerned with problems created by the development of atomic energy. This is a group of New York women: teachers, research technicians, business women, writers and artists. The committee produces its own literature and distributes it at cost. It maintains no office, contributions. You will hear more about Mary Hays Weik after you read her following "story that nobody prints."⁷

The Story Nobody Prints
by Mary Hays Weik

One day in the summer of '64, in a small town just across the Hudson River from New York—Nutley, New Jersey—two boys playing in a nearby pond made a curious find: a colony of frogs, most of which had five to eight legs. When the strange frogs began to turn up in local pet shops and museums, disturbing questions were asked.

It developed then that certain local industries had for years been dumping "unhealthy" wastes into a creek emptying into the Nutley pond. The frogs' mutations, reported *The New York Times*, were attributed by the curator of reptiles at the N.Y. Museum of Natural History to local deposits in the pond . . .

In Canada, a few months later, the *Toronto Globe and Mail* disclosed alarming conditions at Lake El-

⁶ L.A. Sagan, director, Dept. of Environmental Medicine, Palo Alto Medical Clinic. "Human Costs of Nuclear Power," *Science*, August 11, 1972

⁷ *The Yorktowneer*, September 8, 1971

liott, the "model town" founded some years ago in the vast uranium fields of eastern Ontario, the richest in the world. For several years, local plants processing the district's uranium ore had been dumping their "tailings" into the two lakes from which the town derives its water supply. A chance investigation by a local citizen disclosed radioactive pollution at disturbing levels in the water which thousands of the workers and their families had been drinking for years.

It was after several such incidents that I decided to make a direct study of the health records of residents in such localities. In the case of the frogs, I knew of more than a hundred factories and laboratories in that industrial section of New Jersey licensed to use nuclear materials of various kinds in their operations. And wherever there are nuclear industries, power plants, or laboratories, there are always nuclear wastes to dispose of and worry about. For this is the number one problem of atomic development—its spreading contamination of our natural environment.

It is no wonder that camera shots of atomic plants make a pretty picture—situated as such plants usually are beside a picturesque river or lake. For, next to atomic fuel, the most pressing need of these plants is water—enormous quantities of it, close at hand—as a coolant for many types of atomic reactors, and to receive and carry away their "low-level" radioactive wastes. This is atomic energy's greatest potential for disaster. For the quantities of water that go into such plants, anywhere in the world, must eventually go out, carrying their own inevitable contamination, however carefully controlled; plus the added burden of expelled floods of low-level liquid wastes.

What becomes of these wastes—called "harmless" by the plants' owners, but in fact found concentrated as much as *ten thousand times* in the plant and animal life of the rivers and creeks they enter, as far as 150 miles downstream—some of their potent isotopes lasting hundreds and even thousands of years? Do they leach out into surrounding soil; enter other streams, rivers, irrigation systems; drain into nearby seas and oceans; penetrate underground water tables that supply woodland springs and household wells; enter the vegetation that animals and humans eat, the drinking

water they must use? Biggest question of all: What actual physical effects are they having on our populations—especially the people living fairly close to such plants? What do *their* health records show?

That was what I determined to find out. The project that I set up was to take a group of the older and larger U.S. atomic plants and test sites—since a space of years is naturally required to show any noticeable effects on local mortality figures (in Hiroshima, leukemia increase began a year and a half *after* the bombing)—and to find out from actual published U.S. Health Statistics for the areas concerned whether certain fatal defects and diseases commonly associated with radiation injury—*deaths from birth defects, miscarriages, leukemia and other cancers*—exist to any unusual extent in the vicinity of these sites.

Mary Hays Weik made good her promise to research areas around atomic plants to discover if such health disturbances existed. Her first attempt scored a bulls-eye. She found an alarming number of cancer deaths in a small area of the Hudson River village of Montrose, New York, downwind from the big Indian Point nuclear plant near Peekskill, located on the Hudson River approximately 75 miles north of New York City. The report issued by the Committee to End Radiological Hazards shows the percentage of increase in deaths by brain and breast cancers and leukemia in the area during the 5 years *after* the plant began to operate (1963-67), as compared with the 5 years *before* its start.¹ (There are now *two* atomic reactors at Indian Point, with a third planned for 1973.)

Later Mary Hays Weik pinpointed many other atomic plant areas throughout the United States listing statistics of increase in leukemia, miscarriages, and birth deformities, the causes of death most commonly associated with radiation injury.¹

¹ Mary Hays Weik, *How to Use Government Statistics to Find Local Health Patterns*. Nuclear Information Series

How do atomic plants contaminate the atmosphere? Dangerous radioactive gases are released into the air, radioactive liquids (less often) are released into rivers and lakes, dangerous radioactive wastes are buried in the ground, often creating seepage into the ground, and in some cases earthquakes. Many reports have appeared in the press citing the discovery of millions of fish found floating and dead in various areas. The death of the fish was blamed on pesticides and the run-off from chemical plants. Both causes are possible, but another overlooked explanation is the enormous amount of radioactive waste dumped in such rivers as the Mississippi and the Hudson. Billions of gallons of water are needed as a coolant for atomic plants, and if the fish do not die, they become contaminated food for those who eat them.⁸

Radioactive materials are released from nuclear reactors as both soluble and insoluble materials diluted and released into water used for cooling. These materials may find their way into foods; but this result of the contamination is negligible in comparison to the release of radioactive material in gases which are discharged through the stack and which form a plume.⁹

A surprising action took place in October, 1972. The AEC told Consolidated Edison Company that it must stop removing large volumes of water from its two atomic power plants at Indian Point. This is the first time the AEC has tried to regulate the way a power plant is cooled. At present the two operating nuclear plants at Indian Point draw more than 1.1 million gallons of water *per minute* out of the Hudson River, pulling in thousands of small fish

⁸ Mary Hays Weik, *The Pollution of Waterways By Atomic Wastes*. Nuclear Information Series

⁹ *Science*, Aug. 11, 1972

and larvae with it. The third nuclear plant, which is contemplated for the same site, would raise the intake to almost 2 million gallons a minute and, it is thought, be disastrous to the Hudson River fish. The AEC has given Consolidated Edison Company until 1978 to develop a closed cooling system.¹⁰

Meanwhile, it is not only fish that suffer from radioactive wastes eliminated from nuclear power plants, but people who eat fish from radioactively polluted water. Some people also unknowingly drink radioactive river water. Plants grown on soil irrigated with radioactively polluted water and animals which graze along the banks of rivers polluted by radioactive waste from atomic plants, also become contaminated by radioactivity.

Since California and other coastal states are planning to install nuclear plants in the oceans, for cheap water, there is even a risk of radioactive pollution of the oceans.¹¹

Two scientists, Dr. John Gofman and Dr. Arthur Tamplin of the Lawrence Radiation Laboratory, Livermore, California, have tried to warn the public, as well as Congress, that 12,000 additional leukemia and cancer deaths would result annually from nuclear power plants. These two scientific experts (Dr. Gofman is an M.D. and Ph.D. in nuclear physics and chemistry, and a professor of medical physics at the University of California, Berkeley; Dr. Tamplin is a nuclear biophysicist) defied the AEC by trying to report the truth to the public and Congress. An attempt to muzzle them resulted.

Roger Rapoport writes: "The AEC does not like to admit that some scientists believe nuclear wea-

¹⁰ *Washington Post Service*, October 3, 1972

¹¹ Jerold M. Lowenstein, "Risks of Radioactive Pollution of the Oceans," *Oceanic Society*, 680 Beach St., San Francisco, Ca. 94109

pon testing (or power plants) can be dangerous . . . An AEC advisory committee that submits a report unfavorable to the agency may be dissolved and replaced with a friendlier committee representing a 'broader spectrum of scientific disciplines.' When AEC scientists do criticize the . . . program, their superiors try to 'help' them rewrite their reports in a more palatable form. If this does not work, the scientists may find their reports being censored, their staff budgets eviscerated, or their careers jeopardized by being blacklisted."¹²

This is exactly what happened to Drs. Gofman and Tamplin. After they released truthful information revealing the dangers of various forms of radioactive pollution, and were reprimanded by the AEC, they decided to fight back. Their financial support diminished; Dr. Tamplin's budget was slashed and his staff reduced from twelve men to one; Dr. Gofman's connection with the Lawrence Laboratory was severed "by mutual agreement" January 1, 1973.¹³

As Rapoport reports, "The real reason for this security is to keep AEC's secrets from the Americans."

The national flap by AEC pressure against these two scientists aroused the ire of Ralph Nader, who wrote a letter in 1970 (I have a copy before me) to Senator Edmund Muskie, Chairman of the Senate Committee on Air and Water Pollution, which says: "As far as can be determined, the two scientists, John W. Gofman and Arthur R. Tamplin, have been accused of no wrongdoing, no violation of AEC regulations and no scientific dishonesty . . . Unreasonable restraints or pressures on such wit-

¹² Rapoport, *The Great American Bomb Machine*

¹³ Rapoport, *Ibid*

nesses by their agencies is all too prevalent . . . Recent years have seen similar situations in other departments and agencies . . .”

Some of Dr. Gofman’s comments include the following:

—In testifying against a proposed nuclear plant in Eugene, Oregon, he said: “I’m informed that many of you are joggers. Keep it up—and learn to jog fast.”

—Speaking on TV, criticizing the nuclear power industry for demanding more power, he said: “This is a concocted demand. If you ask yourselves what most of the power goes for, it’s not to keep your home lighted, it’s for more smelting of aluminum for more beer cans, TV trays and garbage.”

—On population control, he said: “I don’t think we will really have to worry about birth control . . . so long as we have nuclear energy promotion . . . nuclear power is the path to genocide . . . the most likely population statistic to be arrived at will be zero.”

As Eleanor Galiardi, a lone woman battler against nuclear power plants in California who has worked with Drs. Gofman, Tamplin and Ralph Nader in her fight, writes: “Radiation is the greatest contaminant in the world. No other compares with it. It is tasteless, odorless, colorless. It will be in your blood, in your bones, your food, the air, and will still be alive years later in your coffin (or your ashes).”

At this writing, in late 1972, the most recent figures available show that in the United States, there are 23 nuclear plants in operation, 54 being built, and 52 in the planning stage.¹⁵ These are in addi-

¹⁴ Eleanor Galiardi, “The Deadly Specter of Nuclear Power Plants,” *Let’s Live*, August, 1970

¹⁵ U.S. Atomic Energy Commission, December 31, 1971

tion to the 130 plants "hoped for" by Pacific Gas and Electric Company at points every 8 miles on California's 1,000 mile coastline. If these 130 plants are allowed, people, animals and ocean fish miles distant from these nuclear plants will be threatened. As one physician who understands the hazards of nuclear plants says: "A man who lives 300 miles away from a nuclear power plant receives the equivalent of the radiation from a chest X-ray."

According to Richard Curtis and Elizabeth Hogan, you may as well forget the argument that plans are afoot to develop a safe atomic plant. This may be true but there is not time to wait. As they put it: "The continued effort to develop a safe atomic power program is not worth the risk to humanity . . . (we should) proceed with the complete abandonment of the nuclear plant program."¹⁶

Before I give you suggestions for how to go about encouraging an abandonment program, you must brace yourself against the brainwashing beamed at you on TV, radio, in newspapers and magazines about nuclear plants being your "friendly neighbor," safe, clean and cheap. In a two page, full color ad in *Time* magazine, October 23, 1972, these hypnotic statements by Pacific Gas and Electric Company appeared:

All evidence points unmistakably to nuclear fuel as the answer to man's increasing electric energy needs. Nuclear power plants are effective. They are economical. They are clean, and they are safe. Radiation is governed by the most rigid standards, established both nationally and internationally by highly responsible independent scientific bodies and government agencies. Commercial nuclear plants in the U.S. operate well within these stringent safety limitations. The amount of radiation exposure is insignificant and harmless.

¹⁶ Curtis and Hogan, *Perils of the Peaceful Atom*

Experts who know better state that none of these statements is true, including the rigid standards for radiation. The truth-telling experts state that these standards are lowered as hazards are raised.

Using improvement of esthetic environment as another come-on, the P.G. & E. *Time* ad continues:

"We're installing more attractive poles and in some areas are painting towers to blend into the landscape and using wire that is hard to see. We make esthetics a primary concern in the construction of our plants, offices, substations and service centers. Many have won environmental awards."

How lovely to improve esthetics while people sicken and die from radiation!

Dr. Jerold M. Lowenstein, Associate Professor of Medicine, Radioactivity Center, University of California at San Francisco, says: "I am very much disturbed by the massive advertising campaign which has been launched by the power companies in the United States, aimed at convincing the public that nuclear power is clean, virtually free of radiation, good for the environment, and necessary to meet power demands that their advertising has helped to create. The parallel with the cigarette companies, which for years made unsupported health claims for their products, and have persisted in their promotional efforts despite the proved carcinogenic [cancer causing] and other disease-inducing results of smoking, are only too striking."²⁷

Alice Holtman, in a little booklet called: "Survival Sermon" says: "We are living in a profit system. Somebody is making a business out of everything; nearly everything is done for somebody's pocket,

²⁷ Jerold M. Lowenstein, *Ibid*

not for your good. There are few men in business for your good."

Even that claim that nuclear plants are cheaper has been exploded. The Texas Power and Light Company says it costs \$75 per kilowatt to build a natural gas generating plant; \$150-\$160 per kilowatt to build a plant using lignite; and approximately \$400 per kilowatt to build a nuclear power plant. The Gulf State Utilities Company plans a new 2-unit nuclear plant on the Mississippi River in 1979-80. It will produce 900,000 kilowatts!¹⁸ Multiply that by \$400! Who pays for it? The same people who pay for the construction of *all* nuclear plants: the taxpayer—which means you and me.

Is there a safe alternative to nuclear power plants? There certainly is!

Many years ago, Edgar Cayce stated in his ESP "readings" that Solar Energy would some day be used as a safe source of power. In case you think this is "far out," Drs. John Gofman and Arthur Tamplin write: "More and more of our best scientific and engineering talent is beginning to look at our means of generating power . . . One such approach is the use of solar energy which bathes the earth every day . . . we should not cast it aside until fresh looks at the problem have been given an opportunity."¹⁹

The idea is attracting attention. A husband-wife team of astronomers, Aden and Marjorie Meinel, of Tucson, Arizona, are already working on their own solar power project with a limited capital of about \$25,000, granted to them by three power companies for research. They state: "An immense amount of energy could be produced . . . enough for the entire United States . . . by the use of just 5,000 square

¹⁸ *San Francisco Examiner*, October 1, 1972

¹⁹ Gofman and Tamplin, *Poisoned Power*

am not sure there are a lot of such people, however . . . I don't know of any existing reactor site where the people are actively objecting . . . I think if you do a reasonable job of public relations you can place a reactor any place it is needed."³⁰

We must show these people *that we do object!*

There is now a new way to get relief through the "fairness doctrine" under a Federal Communications Commission Ruling, called: "How to Protect Citizen Rights in TV and Radio." Under this ruling, insistent citizens may get a nuclear plant utility commercial withdrawn, or they are at least allowed to present their own version. This does not promise equal time, but does provide significant amounts of programming, some during prime time. Address your complaints and requests to your station manager and offer the copy of your own spots if possible. Mention that you wish a prompt reply or you will file a complaint with William B. Ray, Chief, Complaints and Compliance Division, FCC, 1919 M Street, Washington, D.C., 20554.³¹ Use this type of freedom of speech quickly while you can, before it is taken from you.³²

There are also three groups you can contact to work toward moratoria and help prevent new nuclear plants. These people are *not* businesses and thus are not charging anything, though it would help them for you to offer even a small contribution to their causes. These groups are:

1. *Citizens Energy Council*, National Committee to Stop Environmental Pollution, Larry Boggart, Executive Director, 113 2nd Street N.E., Washington, D.C. 20002.

³⁰ Curtis and Hogan, *Ibid*

³¹ "Not Man Apart," *Friends of the Earth*, December 1971

³² "Fairness Doctrine Criticized by NBC Chief," *Associated Press*, October 18, 1972

2. *Committee to End Radiological Hazards*, 166 Second Ave., N.Y., N.Y. 10003. Write for up to date information, paying the small cost required for the publication.
3. *The National Intervenors*, 153 E. Street, S.E., Washington, D.C. 20003.

David Brower, of Friends of the Earth, says about this last group: "If it had not been for the pioneering work of the National Intervenors, the opportunity for dedicated scientists to speak out in a comprehensive analysis of the hazards of the peaceful atom would hardly have existed."

Here is a list of the citizens' groups by states, which constitute the National Intervenors. For exact addresses (if needed) write National Intervenors:

California

The Sierra Club, San Francisco
The People's Lobby, Hollywood

Colorado

Trout Unlimited, Denver

Illinois

Businessmen for the Public Interest, Chicago

Indiana

Community Action to Reverse Pollution, Gary
Porter County Izaak Walton League, Chesterton
Save the Dunes Council, Munster

Maine

Citizens for Safe Power, West Bath

Maryland

Chesapeake Environmental Association, Edgewater
Chesapeake Bay Foundation, Inc., Annapolis

Massachusetts

Union of Concerned Scientists, Arlington
Conservation Law Foundation, Boston

Michigan

Citizens Committee for the Protection of Michigan,
Midland
Kalamazoo Nature Center, Kalamazoo
Trout Unlimited, Detroit
United Auto Workers of America, Detroit
Saginaw Valley Nuclear Study Group, Midland
West Michigan Environmental Action Council, Inc.,
Grand Rapids
University of Michigan Environmental Law Society,
Ann Arbor

New Jersey

Survival Inc., Haledon
Delaware Valley Committee for Protection of the En-
vironment, Moorestown
Pompeston Environmental Committee, Cinnaminson
Anti-pollution League, Allentown

New York

Mapleton Intervenors, Babylon
Lloyd Harbor Study Group, Babylon
Joint Schools Committee for Academic Excellence
Now, Inc., New York City
Ecology Action of Oswego, Oswego
Cortlandt Conservation Association, Inc., Croton-on-
Hudson
Citizens Committee for the Protection of the Environ-
ment, Ossining
Citizens Rights Committee, Hicksville
Independent Phi Beta Kappa Environmental Study
Group, New York City
Natural Food Associates of Westchester, White Plains
Rockland County Conservation, Spring Valley
Protect Your Environment, Albany
Natural Resources Defense Council, New York City
Citizens League for Education about Nuclear Energy,
Inc., New Rochelle
Rockland Ecological Coalition, Inc., Spring Valley

Citizens for Gregory Pond, Peekskill
4-H Earthkeepers, Croton-on-Hudson

North Carolina

Metrolina Environmental Concern Association, Inc.,
Charlotte
Carolina Environmental Study Group, Inc., Charlotte

Oregon

Oregon Environmental Council, Portland
Eugene Future Power Committee, Eugene

Pennsylvania

Environment: Pittsburgh, Pittsburgh
Society for Social Responsibility in Science, Pottstown
Environmental Coalition on Nuclear Power, Morris-
town
Southern Columbia Area Taxpayers Association, Cata-
wissa

South Carolina

Environmental Action, Inc. Holton Head Island

Vermont

Conservation Society of Southern Vermont, Benning-
ton
Vermont Natural Resources Council, Bennington
Lake Champlain Committee, Bennington
New England Coalition on Nuclear Pollution, Inc.,
Brattleboro

Virginia

Federation of Homemakers, Arlington

Washington, D.C.

Environmental Action, Inc.
National Wildlife Federation

Wisconsin

Protect Our Wisconsin Environmental Resources, Two
Rivers
Wisconsin Environmental Decade, Racine

ASSOCIATES

Citizens for Clean Energy, Mendocino, California
Citizens for Safe Power, San Antonio, Texas
Connecticut Citizen Action Group, Hartford, Conn.
Ecology Center of Louisiana, New Orleans, La.
Ecology Society, Los Angeles, Cal.
ECOS, Inc., Chapel Hill, North Carolina
Environmentalists, Inc. Columbia, South Carolina
Industrial Mission of Puerto Rico, Rio Piedras, Puerto Rico
Minnesota Environmental Defense Fund, St. Cloud, Minn.
Rhode Islanders for Safe Power, Jamestown, R.I.
World Union for Protection of Life, Sydney, Australia

Ralph Nader has added his voice to a demand for a moratorium. He has joined the "Union of Concerned Scientists" who have also recommended power cutbacks up to 50% of nuclear power plants in operation. (76 plants are currently operating and 55 others are in various stages of construction.)

Dr. Henry W. Kendall, of Massachusetts Institute of Technology, stated that his calculations indicated that "lethal injuries could be received as far as 100 miles away from a nuclear reactor if the emergency core-cooling system failed during an accident . . . and could be the greatest peacetime disaster in our history."

Nader has warned that unless strict safety measures are taken immediately, the nation could face a radioactive crisis sometime during the next 10 years. He has charged the AEC with negligence in alerting the public to possible hazards from reactors.³³

If you think I have, as a reporter, exaggerated the information on radiation in this country, let me

³³ *Associated Press*, January 3, 1973

assure you that what I have told you is weak tea in comparison with reports from scientists who know the full story. Read for yourself the books: Roger Rapoport, *The Great American Bomb Machine*; John W. Gofman and Arthur R. Tamplin, *Poisoned Power—The Case Against Nuclear Power Plants*; Richard Curtis and Elizabeth Hogan, *Perils of The Peaceful Atom*, and Ernest J. Sternglass, *Low-Level Radiation*. These, and many more tell you the truth straight from the shoulder. After reading the real facts which are being kept from you, I am confident you will agree. Griffiths and Ballantine in their book, *Silent Slaughter*, tell us of the shocking information buried in technical journals which the average public never sees. The purpose of their book—and this book—is to bring this information, which has been withheld too long, to public view.

What can you do to protect yourself? Besides eliminating the man-made radiation hazards, there are fortunately a few remedies which you can use to protect yourself and your family. We will look at them next.

Here is a petition, signed by concerned citizens as well as knowledgeable scientists for a moratorium against licensing and operation of nuclear plants.

You vs. the Atom

IT'S POSSIBLE to WIN

If you want to STOP the production of any more radioactive garbage and plutonium, and eliminate the growing risk of a major nuclear accident, PLEASE:

- 1 Sign and send us the coupon below.
- 2 Make additional copies, get additional signatures, and send them too. Your cooperation will produce the first central list and the first indication of the combined strength of the stop-fission movement on a national basis.
- 3 Help us organize a coalition of groups and individuals who want to stop the licensing and operation of nuclear fission reactors. All groups in the coalition will keep their separate identities; groups which can not lobby can contribute individual members to the coalition.
- 4 Help us identify individuals who might be persuaded to join a national stop-fission coalition. If groups will send their own lists to us, we will compile a central list which will be available to you.
- 5 Resolve to persuade at least one additional person each month to sign and send us the coupon. EACH ONE, TEACH ONE! If, from our combined lists, we can identify 40,000 nuclear-power moratorium supporters, and each converts just 12 new people a year, there would be proven (coupon) support for stopping fission from almost half a million voters within 12 months.

That's enough to make Congress really start listening. That's also enough to help local anti-fission groups, which can prove that 500,000 people agree with their position. If we get together,

WE CAN WIN

Whereas the 100,000 megawatts of nuclear electricity projected for this country before 1980 would generate as much long-lived radioactivity as the fissioning of about 100,000 Hiroshima bombs every year, plus 60,000 pounds of radioactive plutonium-239 annually, some of which might reach the black-market for use in private atomic bombs....

Whereas more than 99.99% of that radioactivity must be kept isolated from the biosphere, since 00.01% escaping is the radioactive equivalent of ten Hiroshima bombs per year...

Whereas no one has made a case justifying any confidence whatsoever that we will achieve such a high level of containment at the power plants, reprocessing plants, abandoned plants, in transit, in transfer, and in storage for centuries and millennia....

Whereas nearly perfect containment of radioactivity is not "just a straight-forward engineering problem" at the power plant and elsewhere, but rather is a problem which also requires "fixes" for carelessness, error, and over-confidence in thousands and thousands of normal human beings...

Whereas it is morally outrageous to create a radioactive legacy which may mortgage the future for the next 50 generations in exchange for a little electric power today...

There is just one question:

What gives anyone the right to build and operate nuclear power plants?

I herewith urge Congress to enact a moratorium on the licensing and operation of civilian nuclear power plants, and to accelerate development of fission-free energy technologies.

signature

name printed

address

zip code

date

Please mail this coupon to:
Ms. Egan O'Connor (concerned citizen)
4627 49th St., N.W., Washington, D.C. 20016

Ruth Adams, Pa. John V Gofean, Cal. John E Mustard, WJ.
Larry Bogart, NJ. Leo Goodman, DC. Hugh Nash, Cal.
Chris Boles, NJ. Bette Hogan, NY. Mora Matof, Va.
John Boles, NJ. Anna T Holbrook, VT. Jane Kovick, Oregon
Mary Brewer, Ala. Elise Jervad, NY. Egan O'Connor, DC.
Joe Browder, DC. David Knotts, Minn. Sandra Reed, Mo Caro.
David R Brewer, Cal. Joyce Koupal, Cal. Cecilia Remus, Pa.
Ann Carl, NY. Ed Koupal, Cal. Florence Richardson, VT
Bill Carl, NY. Bryan Lee, Pa. Angela Rinehimer, Pa.
Kathleen Galloo, Minn. George Leitner, NY. Anthony E Solomon, DC.
Joan Danella, Pa. Lance J Lussier, Md. Mary Sinclair, Mich.
John Diamonds, Cal. Irving Lisk, NY. Marilyn Stark, Pa.
Irene Dickinson, NY. Herbert Lipmann, NY. Ernest Sternglass, Pa.
Leon Dickinson, NY. Sam Love, DC. Charles Tucher, Md.
Steve Gdler, Minn. Amory B Kovins, Mass. Howard J Vogel, Minn.
Franklin L Gage, NY. Wendell Marshall, Mich. Mary Hays Weik, NY.
Mery T Garner, Ala. W B Moore, So Caro. Richard Willson, UK.
Bill Garner, Ala. Robt F Mueller, Md.

8 Foods Which Protect Against Radioactivity

FEW people are aware of the dangers of radioactivity. They may not feel well or may have developed an alarming health problem, never realizing the cause. It is encouraging to know that there is already information from scientific tests to prove that there are certain foods which can help protect you from radioactivity. These help *prevent* contamination. In the next chapter we will discuss remedies to remove it.

Doctors, certainly, are as much in the dark about radioactivity as everyone else. Such information was not taught them in medical schools. Consequently they do not recognize the symptoms or know how to treat them, often confusing them with other diseases and prescribing drugs which not only have no effect but may even endanger the patient. For example, one radiation-conscious clinic, which prefers to be unnamed, tells me that a high blood sugar reading often goes hand-in-hand with a high radiation finding. The average doctor assumes the problem is diabetes and prescribes insulin which has proved more disturbing than helpful. Yet, the clinic told me, when radiation is reversed, the blood sugar drops automatically.

I know only a handful of doctors who are aware of the prevalence of radioactivity. One of them told

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me, "People are getting sicker and sicker and harder and harder to treat. Furthermore their emotional problems are as disturbing as their physical problems." Since radioactivity affects the nervous system, along with other parts of the body, this is undoubtedly true, and I have seen it listed again and again among various radiation symptoms. This doctor, fortunately, has realized that there is a common denominator among many of his patients and has finally suspected that radiation may be the cause.

Another alert doctor said, "I agree that people are not only ill but are much more difficult to treat satisfactorily. It is frightening to see young people growing six, seven and eight feet tall and to note they are approaching a neuter type." Many girls are growing beards, and to witness the younger generation, it is often difficult to know which is male and which is female. Glands and hormones and genes are being distorted and young bodies reflect it.

A letter from another physician to whom I wrote states: "It looks as if some mysterious telepathy had directed you my way. I have been interested in the biosphere contamination by nuclear tests ever since the first atomic bomb was exploded in Nevada. The long range effects of these tests deserve much greater attention by the medical profession than they are receiving.

"I have observed the morbidity of people to grow with every year, ever since the beginning of these tests. Every year people are sicker, and more are affected than the previous year. The last winter (1971) has been much worse than ever before.

"Usually, after an acute or self-limiting sickness, people eventually get better. Now, after chronic suffering in some area of their bodies, the area

becomes worse. In addition, they become more irritable, dizzy, hoarse and develop itching, lung, stomach, bladder troubles more frequently. Their temperature rises by one-half to one degree, their vision, hearing, memory and sleep suffer. All these troubles are very difficult to treat."

This physician, experienced in recognizing radioactive symptoms, put his finger on a very important point. He said, "*Only robust and quite healthy people do not develop these changes*, although such people are becoming fewer and fewer."

I have explained in a previous book¹ why some people may be more resistant to radioactivity: "Apparently, if a person is well fortified with the proper nutritional substances, he will be less likely to absorb detrimental elements."

Both of the physicians I have mentioned agree with the premise that proper nutrition can help the body resist invasion of radioactivity, as well as other contaminants. As one of the doctors stated: "We are facing a world calamity as a result of increasing contamination of our environment and increasingly poor nutrition."

This physician contributes some nutritional information which he has learned is effective in protection against radioactivity. He says, "There is recent evidence that the following substances are helpful in guarding against radiation toxicity:

- Large doses of vitamin E
- Large doses of vitamin C
- Fairly large doses of calcium
- B complex

He adds, "I also believe that lecithin is important in helping the liver and blood vessels."

There is agreement on lecithin among other phy-

¹ Clark, *Get Well Naturally*

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sicians. R.D. and J.F. Barhard, both M.D.s, reported that the effects of radiation in rats were counteracted by daily doses of lecithin.² Lecithin can be found in health stores in liquid, powder, granule, capsule and wafer form.

What other nutritional substances are helpful?

One well known and respected nutritionist reports that gamma radiation of the whole body (from radioactive isotopes) causes a fall of magnesium levels in the blood. This provides us with a clue: magnesium supplements (available at health stores) should therefore help to compensate for the deficiency.

The effect of vitamin C, both ascorbic acid (only one factor of the C family) as well as bioflavonoids (the entire C family) has been proved. Fred R. Klenner, M.D., a specialist in vitamin C therapy, states: "Guinea pigs saturated with vitamin C lived in spite of being exposed to *double* the known lethal radiation dose."³

Bone marrow injections helped the survival of four Yugoslavian scientists who had been exposed to a dangerously high radiation dose. The National Cancer Institute also found bone marrow a source of protection against radiation.⁴ Oral bone marrow tablets can be purchased at health stores. Bone meal-plus-bone marrow should be especially helpful since it contains *two* radiation-resisting elements, calcium and bone marrow.

Laboratory tests show that oils are also helpful. Dr. Gladys W. Royal, of North Carolina's A & T College, learned that mice exposed to large doses of radioactivity (which usually prove fatal to them within about 5 days) lived from three to six days

² *Lancet*, September 8, 1956

³ Clark, *Ibid*

⁴ *Science Newsletter*, February 3, 1962, p. 74

longer if they were fed cod liver oil as compared with mice which had not been fed cod liver oil.⁵

Dr. James Ashikawa, University of California, found that if vegetable oils were injected into mice before they were exposed to radiation, they were protected. He also found that mice could survive lethal doses of X-rays if they were given common edible vegetable oils. He especially suggested the use of olive and peanut oils for radiation sickness.⁶

Professor Humberto Aviles, of Mexico, recommended vitamin F (another name for unsaturated fatty acids found in vegetable oils) when swallowed or rubbed into the skin. He said it offered greater protection for those who are employed in atomic laboratories, plants, or work near other sources of radiation.^{7 8}

Pectin is apparently another eradicator of radioactivity. Williard E. Baier, a chemical engineer of California's Sunkist Growers, has done research with fruit pectin (it is found in apples and lemons). He believes very little pectin is needed. Commercial pectin, which is used to make jellies and jam "jell," might be used as a radioactivity remedy, provided the commercial variety does not include additives. Also, don't forget that "apple a day" advice, either. The Russians are convinced that pectin in seeds can force strontium through the body, without its being absorbed. Dr. A. A. Rubanovskaya, a woman researcher of the Soviet Union, used sunflower

⁵ *Modern Nutrition*, November 1960, p. 11

⁶ "Oils Used to Fight Radiation in Mice," *New York Times*, May 11, 1960

⁷ "Oils Treatment Aids Radiation Victims," *New York Times*, May 17, 1960

⁸ Clark, *Ibid*

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seeds as a source of pectin to attract, bind and eliminate radiation from the system.⁹

There is a health product available which helps eliminate toxins and is used in short detoxification programs. It is a vegetable gel bulk substance containing a high amount of pectin. It absorbs, adsorbs (attracts and binds) and removes many toxins from the intestinal tract. It, too, should be helpful in eliminating radioactivity.¹⁰

N-F Factors, P.O. Box 125, Lafayette, California 94549

Other seeds besides sunflower seeds have been found helpful. In Germany, buckwheat seeds and millet are considered radiation-preventive. Actually, the whole buckwheat plant—leaves, blossoms and seeds—has been found useful. One reason: buckwheat is a well known protector of the body's capillaries. A physician in the United States suggests another use of seeds: he believes that sprouted seeds (wheat, mung or soy beans, alfalfa, etc.) contain protective nutrients. These, of course, can be sprouted at home. Be sure to get them untreated, ready for sprouting, at health stores.

Turning to other foods, leafy greens apparently resist fallout better than some other plants. Even if fallout lodges on them, careful washing removes 60% of the fallout.

Smooth vegetables and fruits are less hazardous than rough textured fruit or some layered vegetables, such as loose head lettuce. Even the rough surface of strawberries can collect fallout. Soaking them briefly in water to which a little apple cider vinegar has been added will probably help to dislodge the surface fallout.

⁹ *Journal of American Medical Association*, November 18, 1962

Also *Organic Consumer Report*, August 8, 1972

¹⁰ Available through health stores only, who can order from

Layered vegetables should be separated and washed carefully. Rough skinned fruits and vegetables should be peeled. Nuts, of course, because of their shells, protect the interior meats from fallout. Protein, of any kind, seems to provide more body resistance to radiation.¹¹

Calcium seems to be a must. For example, people on a calcium-poor diet can absorb up to five times as much harmful Strontium-90 as those on a calcium-rich diet. The calcium resists strontium.¹¹ Dr. Linus Pauling states that six tablets of calcium daily would cut the strontium intake by 50%, provided the calcium is made from deep-mined limestone which is uncontaminated by radioactivity.¹²

Another mineral which plays an important role in protecting the thyroid from Iodine-131, particularly for children (who are supersensitive to it) is regular iodine. Dr. Russell Morgan, chief radiologist, Johns Hopkins University, says, "The addition of stable iodine has shown by studies that 1 mg. for children and 5 mg. for adults daily will induce gradually over a few days a reduction of about 80% of radioactive iodine collected in the thyroid gland, and more reduction can be achieved by larger doses."¹¹

This emergency iodine prescription should be supervised by a physician, since it is possible to get too much iodine on a continuous basis. A safer source of iodine for the average person for prevention purposes is found in kelp (seaweed) tablets, which contain all the minerals found in seawater. *There is more and more conjecture that minerals may be the real key to protection against radioactivity.*

¹¹ Clark, *Ibid*

¹² "These Precious Days," *New Yorker*, October 3, 1959

¹¹ Clark, *Ibid*

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Kelp has been tested by McGill University, in Canada, and found to act as a binding agent, removing radioactivity (as described in pectin) from the intestines. For example, kelp reduced the absorption of Strontium-90 by animals from 50% to 80% as compared with untreated animals which received no kelp at all. The animals given kelp also showed a 70% drop in bone absorption and a 60% drop in blood levels. Thus kelp can be considered a true radiation antagonist.¹³ Kelp tablets, which are rich in both major minerals and minor minerals (the trace minerals) are found in health stores.

In addition to calcium, B-complex vitamins are another *must* for radiation protection. Like calcium, B vitamins aid the nervous system which is usually upset by radiation. Though vitamin B1 and B6 are considered especially important, the entire B complex is best of all. There are two foods especially rich in these vitamins: liver and Brewers yeast. Liver protects against X-ray and other types of radiation.

Brewers yeast is one of the most dramatic anti-radiation foods of all. It is a rich all-in-one source of many nutrients: protein, minerals and the B-complex. Mice fed Brewers yeast before radiation were protected, as compared with mice not fed Brewers yeast and which were not protected. Even those fed Brewers yeast *after* radiation had an 85% drop in hemoglobin, followed by a 95% recovery. Giving Brewers yeast to people prevented—in many cases—a fall in hemoglobin.¹⁴

In mentioning supplements of vitamins and minerals, except for those suggested by scientists, I

¹³ *Medical World News*, July 3, 1964;

Also: *International Journal of Radiation Biology*, 1971.
p. 19; pp. 79-85

¹⁴ Clark, *Ibid*

have purposely not supplied dosages. Each person is unique and no two people need the same amounts. Books on nutrition, including mine, will help you learn how much you need and how to experiment until you find the amount best for you.

Just remember that by keeping your cells saturated with wholesome, protective factors from organic foods and supplements, there is less room for disturbing contaminants to take hold.

Another tip: try to eat at least one raw meal daily. This is because raw foods contain vitamins and minerals in undiluted form which cooking may destroy in part. Also, raw foods contain enzymes, killed by heat, which act as housecleaners for your body.

We used to take health for granted, and it did not seem to make much difference what we ate or drank. No more. Surrounded as we are by so many serious pollutants, radioactivity at the head of the list, maintaining health is now a full time job.

Summary of Protective Foods and Supplements

Foods:

- leafy green vegetables
- smooth skinned fruits and vegetables (peel those with rough skins)
- protein to build body resistance and energy
- seeds and sprouted seeds; sunflower seeds
- liver or desiccated liver tablets or powder
- oils, vegetable, cod liver and others
- Brewers yeast (I have mentioned in another book the values of Red Star yeast and liquid Brewers yeast from Germany, both available at health stores)¹⁵

¹⁵ Clark, *Secrets of Health and Beauty*

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Supplements:

- vitamin C (ascorbic acid and the bioflavonoids)
- vitamin B complex
- vitamin B6
- bone marrow (can be combined with bone meal in tablets)
- calcium
- magnesium
- natural iodine
- kelp tablets or other sources of *all* minerals
- lecithin
- pectin (fruits, sunflower seeds or other products)

9 Remedies for Radioactivity

ONE of the hardest searches of my life has been finding remedies for reversing radioactive contamination. Radioactivity is so new, comparatively speaking, that few laboratory tests have been conducted on protective or remedial measures. Consequently, there is only a trickle of printed information available and I was forced to contact various specialists personally in order to learn the remedies I am about to share with you.

First, you must realize that there are differences in the doses of individual exposure to radioactivity. For example, results are more sudden and far more devastating from close proximity to a bomb's detonation, like Hiroshima, or to an accidental leakage from a nuclear power plant, both considered forms of high-level radiation. Therefore, many people are inclined to scoff at the danger of exposure to low-level radiation, such as X-rays, TV or even the slow release of radioactivity from a nuclear plant. These scoffers do not realize that the results are delayed and cumulative, and may eventually be awfully serious. It merely takes longer. Even distant exposure to a nuclear atmosphere test is classified by Dr. Sternglass, professor of radiation physics at the University of Pittsburgh, as lower-level radiation, yet its effect can be disastrous.

For example, Dr. Sternglass tells of the incident

witnessed by Professor Herbert Clark's radiochemistry class at Rensselaer Polytechnic Institute, near Troy, New York.¹ After an atmospheric bomb test conducted by the AEC in Nevada, where the bomb, code-named Simon, had been detonated only 300 feet above the desert, the debris of the mushroom cloud soon reached 30,000 to 40,000 feet in altitude, and then was blown by winds 2,300 miles across the United States where it encountered a severe thunderstorm in the New England area. This storm brought the fallout to earth, and Dr. Clark's students, armed with portable radiation detectors began measuring the radioactive fallout on paved streets, roofs, pieces of cloth and even leaves of plants. Samples were also taken of water in reservoirs and from home taps. Within a few hours reports came from students in many nearby towns that the average radiation readings were twenty to a hundred times higher than normal, and hot spots were ten times higher than that! The professor and his students learned that using an extreme method, hot concentrated hydrochloric acid, was only partly effective in removing the radioactivity from the surfaces where it had been deposited.

California offers another example of delayed contamination from bomb tests. A monthly report by a state radiation laboratory shows that in tests of radioactive fallout in water, milk and vegetation, contamination varies according to the amount of rainfall. It is less in drier areas, greater in rainier areas. This is because the fallout from bombs may hover in the high altitudes but may not descend until rain, snow (sometimes fog) bring it down to earth. Even in the rainy areas, California still has a rainy season and a dry season. The dry season usually

¹ Sternglass, *Low-Level Radiation*

begins in April and ends in November; the rainy season lasts from November to March. A doctor recently told me, "I don't know why it is, but after the first rain, following the dry season, I suddenly have more sick patients." He may not realize that symptoms may increase with *any* precipitation, though it may be more noticeable, by contrast, after a dry spell.

Doctors are baffled by these symptoms, as we have previously mentioned, so it is up to us to protect ourselves, whether it is from a more acute attack following precipitation, other more serious exposure, or contamination acquired gradually from exposure to low-level radiation devices. Atmospheric fallout (from bombs or precipitation) invades the body through the lungs from breathing or through the skin. In the latter case, it can be removed by immediate bathing (like washing vegetables) and even washing clothes worn during exposure. In serious high-level radiation exposure, clothes are the first things to be discarded, since radioactivity clings to them, as Dr. Clark's study indicates.

Protection from breathing fallout is difficult and probably accounts for most of our troubles. A remedy which follows can help here. Protection from exposure to man-made devices that invade tissues and bones calls for avoiding these devices or limiting their use to an absolute minimum, as well as using both preventive and remedial measures.

Any remedies employed *after* exposure, may not be permanent. You can use them to help rid yourself of radioactivity but when you are re-exposed, you will have to decontaminate yourself again.

Also remember that if you have had a long and chronic illness, possibly caused by radiation exposure, the removal of the radioactivity does not guarantee immediate healing. It takes the body

time to adjust. When the radioactivity has been removed, and if your nutrition supplies the correct repair materials, you can regain health more easily. *The body is always trying to work toward health.* It needs all the help it can get.

Those who get more exercise and do more deep breathing in fresh, outdoor air, seem to resist radioactive contamination better than those who don't. Even yoga students seem to be more immune, because they exercise every part of the body through yoga exercises done in conjunction with deep breathing.

The following remedies can be used safely even if your trouble has *not* been caused by radioactivity. However, sudden falling of hair, sudden dimming of vision as well as overwhelming fatigue which no amount of rest seems to help, even sudden eczema, should all be considered clues to possible radioactivity contamination.

The following radical remedy can be used for contamination from any source of radioactivity, including serious exposure. It was contributed by a scientist of a radiation laboratory and has been used successfully by at least one thousand people. The before-and-after effects have been measured by radioactive detecting equipment which proves that it works.

Formula for Fallout

1 Teaspoon of whole, natural sea salt (Chico-San brand)

1 Teaspoon of baking soda

1 Quart of water

Mix together.

Take one 8-oz. glass of solution every one or two hours, (according to severity of the case).

With each glass of solution take 3 calcium lactate tablets (5 grain)

If the symptoms seem to be in the head, the glands in the neck and throat, the chest congested, or the sinus involved, add to each glass of the solution $\frac{1}{4}$ to $\frac{1}{2}$ teaspoon of cream of tartar.

This program should be followed as long as the symptoms last. As they regress (or get better), lengthen the time between doses.

If the attack is very severe, a hot bath may be taken using 1 pound each of Salt and Soda to the tub of water. Following the salt and soda bath—take a Clorox bath to alleviate metallics. Use 1 cup of Clorox to tub of hot water.

Alternate baths by taking Salt and Soda Bath in the morning and Clorox Bath at night.

In addition to using the oral solution, or the bath, this formula may be used in another way: Put equal parts by weight, approximately $\frac{1}{4}$ cup of whole natural Sea Salt (from health stores) and slightly more Soda, in a small plastic bag. Close tightly with a "twistem." Rub this bag all over your eyes, face, neck (front and back), the top of your head, the palms of your hands, top of your feet, chest, tips of fingers and toes and any other part of your body you wish. (You may do this with your clothes on.) Then, because the mixture becomes contaminated, throw it away! Using a second bag, repeat these same movements. This seems to set up an electrolytic action, decontaminating with the first bag; stimulating the body fluids to flow more normally with the second bag. (Discard it too afterwards.)

I have been told that the oral formula for fallout has been used for leukemia cases by taking six oz. of the Salt-plus-Soda plus Cream of Tartar mixed in water, every two hours for 4 times; then 6 oz. night and morning until symptoms are alleviated.

Another reported natural treatment for both Hodgkin's disease and leukemia is the use of a spe-

cies of a plant belonging to the Periwinkle family, a woody shrub called *Vinca rosea*.² The suggested remedy is 20 leaves to 1 cup of water, blended and strained, drinking three cups daily.

This plant is said to lose its effectiveness if dried or processed, so you may have to grow your own. It is a tropical plant which can grow out of doors in the Deep South or indoors in colder climates. A commercial extract from the plant called *Vincristine* has shown dramatic results.

Red Beets

Irradiation may effect the blood production and may also upset the stomach, intestinal and liver function. Europeans have discovered that beet juice, either raw or fermented (the latter is imported and available in American health stores) has been reported helpful, especially if a blood condition such as anemia exists. It has also been found beneficial for heart muscle diseases, and inflammation of nerve cells as well as for degenerative diseases. It is said to have a rejuvenating effect. The therapeutical effect seems to be associated with the red coloring pigment, also found in red wine, red berries and other naturally red foods,³ all said to help build hemoglobin of the blood.⁴

Recipe for Beet Tonic

1 lb. of raw beets, cut up with peel on; add:
1/4 lb. of strained, natural honey
1/4 lb. of brown sugar

² Not to be confused with *V. minor*, a common ground cover with shiny leaves and blue flowers.

³ E. L. David, F.I.S.P.H., Biological Researcher, London

⁴ Reported at the Eighth International Congress of Prophylactic Medicine, September 6, 1961. (See Clark, *Get Well Naturally*)

Cover the beets with honey and sugar in a covered dish and let stand for two full days.

Drain through a colander. Add about 1/16 of a pint bottle of Guinness Stout. Refrigerate.

Take one tablespoon daily, or if you feel run down, three times daily.

Many people prefer to drink the imported, fermented beet juice, which is delicious.

Beverages

One doctor has used the following beverage for radiation in his patients, with good results, he claims:

- 2/3 cup of hot water
- 1 heaping teaspoon powdered coffee
- 1 tsp. sugar (or honey)
- 1 level teaspoon ground cloves

Take one teaspoon every hour on the first day; taper off the second day.

From old China comes the suggestion that tannin in tea is said to be an antagonist to radioactivity. Honey (natural, unrefined) is considered another help. Those who drink sweetened tea can combine the two.

Aloe Vera

Aloe Vera is another plant you can grow at home. It has been used for serious radiation burns and also is used in cosmetics to smooth the skin. A liquid form is available commercially, and a suggested dose for radiation is one teaspoon daily. Aloe Vera is a succulent and close to the cactus family, and each leaf or projection contains a thick, fleshy gel. This gel is a marvelous remedy for any kind of burn. I keep a plant growing at all times. (A nur-

sery can probably help you locate one.) For an ordinary burn I cut off a short length, and squeeze out the gel onto the burn. The pain stops instantly, and leaves no scar. For radiation purposes you may find that eating the gel is easier than trying to convert it into liquid.

Fluorescent Protection

People who must work under fluorescents have several recourses. If the English are correct, taking more vitamin A would be helpful to offset the vitamin A deficiency they believe follows exposure to fluorescents. Another solution is to replace fluorescents in your home or to ask your employer to replace them in your office with the type of full spectrum fluorescents (Vita-Lite) mentioned earlier by Dr. John Ott.

Many who work all day under fluorescents complain of aching legs. One investigator has observed that taking a bath to which a handful of real, whole sea salt (which contains all minerals and is found in health stores) has relieved the leg aches within two or three days.

Brewers Yeast—Again!

I have already mentioned the fact that Brewers yeast is extremely helpful for radiation, not only as a prevention but for reversing radioactivity in the body. Nearly ten years ago Russian researchers reported that radiation damages could be influenced favorably by yeast, which they found could help build and regenerate cells damaged by radiation.⁵

The two yeasts previously mentioned are of a certain strain known as "*saccharomyces cerevisiae*." In this country this strain is found in Red Star powdered or flake yeast, as well as in the liq-

⁵ *Dokl. Akad., Nauk S.S.D.R.*, Bd. 126, p. 417

uid yeast imported from Germany; all are available from health stores. As a result of therapy by this type of yeast, a German researcher, Dr. Holger Metz, Ph.D., states that the following improvement is possible, as compared to the usual symptoms resulting from radiation damage:

- no redness of skin
- very little loss of hair
- no mucous membrane inflammation
- no depression
- quick recovery of physical condition
- good blood picture

This coincides with the findings by other German researchers who learned that vitamin B6 protected rats against whole body irradiation, and Hungarian investigators found that pantothenic acid (another B vitamin) prevented rats' fur from falling out after exposure to radiation. Since loss of hair in humans is one of the common symptoms of radiation contamination, it is noteworthy that pantothenic acid and B6 both are abundantly supplied in the yeast.⁶

These two yeasts can be made quite palatable by adding them to tomato juice, or better, to fermented beet juice, since the latter simultaneously provides two remedies in one. Both yeasts can be procured at health stores.

For chronic symptoms of low-level radiation, instead of trying to take all the remedies mentioned here, on a daily basis, perhaps alternating them might be easier. Also, by taking sunflower seeds or eating an "apple a day to keep radiation away," you would receive extra protection. Kelp in some form, preferably sodium alginate, should be taken *daily*. If there is exposure to a sudden high dose of

⁶ Personal communication

radioactivity or an acute attack occurs, the Formula For Fallout is apparently a must providing the salt used is whole salt such as Chico-San (at health stores). Other types may cause side effects.

Lung Diseases: Emphysema, Bronchitis

Dr. Ernest J. Sternglass has traced the correlation of the rising rate of emphysema, bronchitis and other respiratory diseases directly to the increase of nuclear fallout in the air. Previously, it was assumed that regular air pollution (smog) was the cause of these serious lung disturbances, responsible for so many deaths all regular air pollution and fallout. Dr. Sternglass says, "Instead, all the evidence pointed to radioactive air pollution, both from fallout and from nuclear power plants, as the greatest single contributor to the rise in all types of chronic lung disease around the world." He adds that smoking does not help these conditions.⁷

At first, people complain of shortness of breath, severe catarrh and mucus. They eventually begin gasping for breath upon slight exertion. Oxygen is reduced, the heart is required to beat harder and faster to supply more oxygen, and degenerative changes begin. As one doctor told me, when a patient walks into his office gasping for breath after only walking down a short hall, the doctor realizes it may be too late. The lung membranes may be permanently damaged so that they can no longer expel the plugs of mucus resulting from the catarrhal condition. Eventually, if swift measures are not taken, the cells may die, and the person, unable to breathe, may die also. So the first signs of mucus or catarrh as well as shortness of breath require *immediate action*. The first step should be aimed at the mucus problem.

⁷ Sternglass, *Ibid*

Mucus Remedies

Please note in the Formula for Fallout the addition of cream of tartar which seems to help dissolve mucus.

—Another remedy is fresh lemon juice. It can be added to hot water the first thing in the morning and drunk before breakfast (rinse your mouth afterward to protect tooth enamel). Or combine the juice of one lemon and one tablespoon of Tupelo honey with a cup of hot water. Add a dash of cayenne to increase circulation, and drink.

—Another remedy which has proved helpful to several people suffering from mucus is as follows: Add 1 teaspoon of salt to the juice of one Spanish onion. Mix approximately one teaspoon of this with a half glass of water and use as a gargle. Once daily is sufficient. Use when your throat feels scratchy and your upper chest heavy.

—Drinking fenugreek tea or eating fenugreek tablets is an excellent method of breaking up mucus. This may have to be continued for several weeks until the mucus has completely subsided. (at health stores)

—Sometimes the mucus seems to center in the nasal area appearing to be similar to the symptoms of nasal diphtheria. Fred R. Klenner, M.D., tells of three children suffering from nasal diphtheria. One was given massive doses of vitamin C (ascorbic acid). The others were not. The children who did not receive vitamin C died. The child who did receive vitamin C lived and is a graduate nurse today.

Emphysema and related diseases may be complicated by smog. Vitamins A, E and D are advised by many physicians. Vitamin D, usually available from natural sunshine, is obscured by smog. Vitamin E encourages oxygen to the lung tissues and vitamin

A heals the lung surfaces. An M.I.T. scientist found that vitamins A and E protect lungs against air pollution. In tests at M.I.T., animals which had been found deficient in vitamin A for a long time, exhibited hard, scaly, thick lung cells. These animals showed lung improvement within 18 hours after administration of vitamin A.⁸

Vitamin E has been found to be a protection against air pollution from smog, the two most disturbing pollutants being ozone and nitrous oxide. Drs. Daniel B. Menzel of Duke University, Jeffrey N. Roehm of Battelle-Northwest in Washington, and Si Duk Lee, of the Environmental Protection Agency in Cincinnati, found that rats given extra vitamin E when exposed to these pollutants lived twice as long as those without it.

Smog seems to create an alkalinity condition, too. A horse, subjected to smog, began to lose its hair by the handfuls. When given apple cider vinegar in its drinking water, the hair stopped falling and grew in.

Carl J. Reich, M.D., of Canada, has successfully treated approximately 5,000 cases of chronic asthmatics with natural A and D vitamins plus bone-meal tablets to provide minerals. He believes that emphysema and bronchitis may be similar to asthma since the lungs and bronchi may be involved in all three disturbances. His method brings quick results for asthmatics, at least. He uses natural vitamin A and vitamin D (both in the same product) plus some drops of concentrated natural A and D mixture derived from tuna fish oil. In many cases, mucus is raised and eliminated.⁹

⁸ *Chemical and Engineering News*, June 29, 1972

⁹ Carl J. Reich, M.D., "The Vitamin Therapy of Chronic Asthma," *The Journal of Asthma Research*, Vol. 9, No. 2, December 1971

A surprising remedy for lung congestion was given me by a well-known nutritionist and lecturer:

Take 5 drops of anise oil (from drug stores) on honey or brown sugar, 30 minutes before meals. Gradually increase to ten drops.

The nutritionist told me that a man who was unable to walk further than 10 steps at a time, wrote her to say that as a result of this remedy he was climbing and walking at a 7,000 foot altitude with no difficulty while on his trout fishing vacation.

There is another pungent oil available both in the United States and Europe made of combined oils of peppermint, eucalyptus, cajeput, juniper, wintergreen, menthol and oil of cloves. It is said that inhaling it will help clear up mucus, clear catarrhal and bronchial congestion, as well as clearing the head.¹⁰

Outdoor exercise in fresh air is a great help for lung sufferers as is deep breathing. Both help to clear the lungs and bronchial tubes and expel the waste products. Here is a breathing exercise originally intended for those who wish to give up smoking. William P. Knowles, an English expert on breathing, says that of students from 100 countries, eight out of 10 have stopped smoking entirely or greatly reduced their intake. A secretary who smoked 25 cigarettes daily suffered from bronchitis and a cough, stopped smoking in two months, after taking the course two years ago. Recently she tried a cigarette to test herself; the taste, she said, was awful. "My desire to smoke is gone, along with the bronchitis and the cough."

Here are the steps of the Knowles system. It is done three times daily, for three minutes each.

¹⁰ For information write to: Heidi E. Ritter, Importer, 8300 South 20 St., Oak Creek, Wis. 53154

1. Sit upright in a chair. Don't touch the back of the chair with your spine.

2. Stretch your arms forward, then draw them back slowly; let your elbows rest against the sides of your body; put hands—palms down—on your thighs.

3. Breathe in and out quickly through your nose about a dozen times. A smoker may cough and sputter, but this is good for expelling phlegm and stale air.

4. Once the lungs are cleansed, exhale slowly and completely until there is no air in your lungs. Then inhale to the count of seven. Pause for one second, exhale. Do this breathing fourteen times, seven in and seven out. Keep your chest out and shoulders back to allow freedom for breathing. That's it!

Carlson Wade, a nutrition and health writer, suggests another breathing exercise for bronchitis and emphysema. He says that in these disturbances spasms occur in the tiny tubes or air sacs, and prolonged oxygen imbalance may cause the lungs to lose some of their elastic quality. His solution is to get the air *out of*, rather than *into* the lungs. The emphasis should be on exhaling, rather than on inhaling, he says:

1. Exhale slowly on the sound of S-S-S-S, prolonging is as long as possible before inhaling. Breathe normally, then repeat. Do the whole exercise ten times. Always try to empty the upper lung area (chest) before emptying the lower lung area (rib cage).
2. Lying on your back, inhale as you raise one leg to a 45° angle. Exhale as you lower your leg. Repeat with other leg.
3. While still on your back, raise your head and shoulders as you *exhale*. Inhale as you return to the original prone position.
4. Put a book on your diaphragm just below your first ribs. Breathe against this resistance. This is good for shallow breathers, Mr. Wade believes.

Homeopathy

Probably the greatest help of all for radioactivity is found in homeopathy. Homeopathy has been maligned by orthodox doctors, as well as purveyors of drugs, probably because it is easy, cheap, and successful. It has been in use for centuries and serious side effects are unknown. If you hear a doctor or a drug manufacturer claim that homeopathy is a quack treatment, just remember that this is the same argument they use against health foods and vitamins and minerals. Actually, in order to practice homeopathy, one must first be a physician, graduated from a medical school. The course in homeopathy is then given as a post-graduate course to any doctor who wishes to take it after he has received his M.D. degree.

The average doctors who use regular drugs, and who are known as allopaths, usually treat a disease with drugs which mask the symptoms. Homeopaths *remove* the cause, quickly, easily, painlessly and inexpensively. Instead of regular drugs, homeopaths use tiny sweet pellets which contain herbal or mineral substances, or sometimes microscopic amounts of a certain drug. The homeopaths do not take X-rays, or write a prescription for a regular drug, or dismiss you after a quick interview. They take infinite time to learn about *you*, your symptoms and your problems before choosing the right remedy. Homeopathy can bring amazing results quickly, without extensive, expensive laboratory tests or surgery. I have written more about homeopathy in one of my books,¹¹ and you can learn still more from another book which gives a more complete description.¹²

¹¹ Clark, *Get Well Naturally*

¹² Coulter, *Homeopathic Medicine*

Today there are very few homeopaths in the United States. The Queen of England always maintains a homeopathic doctor on her staff. India respects homeopathy, as do most other countries, but in America it is brushed off as a fad, because of ignorance or for fear of competition. Believe me it is not a fad, but a very real help. In order to find a homeopathic doctor in your area, write to The American Foundation for Homeopathy, 910 17th St., N.W., Washington, D.C. 20006.

Like other busy doctors, not all homeopaths are yet aware of the far-reaching and serious effects of radioactivity, or of the great potential they have for treating it. But these doctors are open-minded and ready to learn what their specialty can offer. One radioactivity researcher in England believes that healing in connection with radioactivity can be approached *only* homeopathically. An American homeopathic physician believes that other therapies, in which energy confronts energy; electrotherapy, acupuncture, chromotherapy, heliotherapy, etc., may be of some help, but because of its greater specificity and application, he considers homeopathy far superior.

Homeopathy is based on the premise that "like cures like." This means that a remedy containing the same substance which produces the illness is given in minute amounts. A homeopath who has been treating radiation symptoms ever since the beginning of the Nevada tests, states in terms homeopathic physicians would understand (which I hope you will show to your homeopathic physician): "While almost any remedy of the *Materia Medica Homeopathica* may be indicated in radiation cases, some remedies are needed much more frequently than others. I am using very frequently, *Arsenicum alb.*, *Ferrum met.*, *Phosphorus*, *Sulphur*,

Carbo veg., Silica, Natrum mur., and Nux vom. I am using them exclusively in ultra high potencies which can be repeated often and always work amazingly well if the *similimum* (the right substance) is found." Your homeopathic doctor can translate this for his own use.

Other homeopaths are using the homeopathic remedies, Sulphurous acid, 36x, to counteract the same element in smog; and Diptherinum 200 to aid diphtheria-like mucus problems.

Some English homeopaths are studying the effect of homeopathy on radioactivity at the present time.

Schuessler Cell Salts

In addition to seeking the services of a homeopathic physician, there is another form of homeopathy for which you need no doctor at all. These *may* be the crux of healing or preventing over the long run the whole problem of radioactive contamination. This form of homeopathy is called the Schuessler Cell Salts—also available as tiny sweet tablets or pellets. These, however, contain minerals which, on analysis, have been found already to exist in the human body. They are considered necessary for proper growth and maintenance of healthy cells. They are not new, merely ignored or forgotten, in favor of drugs. They have been used as early as 1873 by W. H. Schuessler, M.D., who learned that if any of the body cells became deficient in these minerals, an abnormal or "diseased" condition resulted. These cell salts are not used to "cure" anything; they merely supply to the body a missing substance which, when corrected, helps the body to repair itself. When I asked a professional expert who has worked with them for fifty years if there were any danger in taking these cell salts, he said,

"Absolutely not! If the cell is already full of the mineral, it will merely reject it and the excess will be excreted from the body." They are slower than regular homeopathy, but they can be a marvelous protection.

It is these very same cell salts that Mira Louise, mentioned in Chapter Three, found missing from her patients after nuclear testing. When she supplied them, the symptoms were ameliorated. The cell salts have strange names:

The Twelve Cell Salts

1. *Calcarea Phosphorica* (Phosphate of Lime), abbreviated as *Calc. Phos.*
2. *Kali Phosphoricum* (Phosphate of Potash or Potassium) or *Kali. Phos.*
3. *Magnesia Phosphorica* (Magnesium Phosphate) or *Mag. Phos.*
4. *Natrum Phosphoricum* (Phosphate of Soda) or *Nat. Phos.*
5. *Ferrum Phosphoricum* (Phosphate of Iron) or *Fer. Phos.*
6. *Natrum Sulphuricum* (Sulphate of Soda) or *Nat. Sulph.*
7. *Kali Sulphuricum* (Sulphate of Potash) or *Kali. Sulph.*
8. *Calcarea Sulphurica* (Sulphate of Lime) or *Calc. Sulph.*
9. *Kali Muriaticum* (Chloride of Potash) or *Kali Mur.*
10. *Natrum Muriaticum* (Sodium Chloride) or *Nat. Mur.*
11. *Calcium Fluorica* (Fluoride of Lime) or *Calc. Fluor. Fluor.*
12. *Silicea* (Silica)

These cell salts can be procured without a prescription at a homeopathic pharmacy¹³ in your area.

¹³ If there is no homeopathic pharmacy in your area to supply the individual cell salts or combination, write: Standard Homeopathic Co., P.O. Box 61067, Los Angeles, Ca. 90061

The experts tell us they should be purchased in the 3x potency, except for Calc. Fluor., Nat. Mur., and Silica, which should be in 6x potency. There is another product which includes them all. You can follow the directions on the bottle of this all-in-one mixture or do as one expert does. He and his family merely take a teaspoonful each morning. The tablets are *not* to be washed down with water but dissolved dry on the tongue. They may take from six months to three months to produce results, depending upon the severity of need. Another expert I know takes the all-in-one product every day for prevention purposes, but adds, from time to time, the separate cell salts as needed. You should study the cell salts for yourself to find out what each cell salt does for health. It is an intriguing study.¹⁴

Cell salts help health in many ways by correcting mineral deficiencies of the cells, but to be used for radioactivity, the late Mira Louise gave these special hints:

"Kali. Phos., Nat. Sulph., Mag. Phos., Calc. Fluor., Silicea, Calc. Phos., Kali. Sulph. and Ferrum. Phos. are always short in the blood of those who have flu or any form of radiation sickness.

"For the strange restlessness and the morbid, frightening dreams that follow radiation sickness: Calc. Phos., Calc. Fluor., Mag. Phos and Kali. Mur., if taken in a little hot water and sipped on retiring will invariably act as a charm: The patient, falling into a restful sleep will awaken to a new world in the morning.

"For the husky voice which indicates that the thyroid gland has been affected, Kali. Phos., Calc. Phos., Calc. Fluor. could be taken before meals and Mag. Phos. and Ferrum Phos. afterwards. Calc. Iodine and Stannum (tin), two newer, extra cell salts, could be taken on alternate days.

"Silicea is designated for falling hair.

¹⁴ Chapman and Cogswell, *Dr Schuessler's Biochemistry*

"Perhaps the sold purpose of the biochemic or Schuessler remedy is to assist the body to detoxicate itself. The tendency of the body is to recover lost equilibrium, if given the chance. Everyone must be given that chance."¹⁵

I order a full set of these 12 cell salts (compared to drugs they are very inexpensive), as well as the all-in-one product. Remember they are not drugs, but may take more time. The improvement is subtle but rewarding. Homeopathy and these simple substances may turn out to be the most effective preventive, as well as remedy, against radioactivity.

There are three unusual methods of reversing radiation even after it has become a serious health problem in the body. One method is supplied by Frances Nixon, author of the book, *Born to be Magnetic*. Mrs. Nixon has discovered that radiation can produce conflicting fields of energy in the body, and by the unique method described in her book, the body can be made to vibrate once more in resonance with one's neighboring cells, to repel the radiation and to re-establish harmony. Frances Nixon works with a Stanford University scientist who confirms her findings. Close to a thousand enthusiastic members of the Magnetic Society which has developed in response to her teachings, agree.¹⁶

Even if cancer has set in, it may not be too late. By the use of a simple type of amazing thought control, a method taught by a psychiatrist, Dr. Masaharu Taniguchi of Japan, has reversed cancer in thousands of patients as proved by before-and-after X-ray photographs.¹⁷ To further prove the incredible healing power of thought, you should find my own book helpful.¹⁸

¹⁵ Louise, *More About Biochemistry*

¹⁶ Nixon, *Born to be Magnetic*

¹⁷ Taniguchi, *The Human Mind and Cancer*

¹⁸ Clark, *Help Yourself to Health*

Finally, I have witnessed the complete rehabilitation of a man exposed to a huge dose of radioactive fallout which travelled from a bomb test detonated above ground in Nevada to California. This man was jogging in the California mountains when the radiation surrounded him. Not long after he began to show extreme nervous symptoms. Next he developed burning in all of his extremities and these symptoms became progressively worse, until they gave him no relief or peace. His fingers, his feet, his arms not only burned, but became excruciatingly painful. He was unable to sleep, sometimes for weeks at a time. He was tested in hospital after hospital and exposed to many doctors. The verdict was always the same: "Nervous system degeneration; cause unknown."

Finally when it looked as if he were not going to survive, he went into the chapel of the church with which he was associated, got down on his knees and prayed for the warmth of God to enter his body and help make him a perfectly healed channel for helping others. The turning point immediately became apparent. His pain left, his burning subsided, his insomnia disappeared, and he is today a healthy, happy man, completely free of his old symptoms.

I know this man personally, as do hundreds of others. We can all vouch for the transformation. It has been one of the greatest inspirations any of us have witnessed, namely, that a higher Divine Power can help us when all else fails.

APPENDIX:

Books Referred to In Text

BORN TO BE MAGNETIC, Frances Nixon. Available
Magnetic Publishers, Box 718, Chemamus, B.C.,
Canada

**DR. SCHUESSLER'S BIOCHEMISTRY: A Medical
Book for the Home**, J.B. Chapman, M.D. Ed. by J.W.
Cogswell, M.D. New Era Laboratories Ltd., Saffron
Hill, London EC1, England. Available from many
homeopathic pharmacies in the U.S. or from Stan-
dard Homeopathic Co., P.O. Box 61067, Los Angeles,
Cal. 90061

GET WELL NATURALLY, Linda Clark. Devin-
Adair, 1965; pb. ed. Arc Bks., 1968, N.Y.

THE GREAT AMERICAN BOMB MACHINE, Rog-
er Rapoport. E.P. Dutton, 1971, New York

HEALTH AND LIGHT, John N. Ott, Devin-Adair,
1973, Old Greenwich, Conn.

HELP YOURSELF TO HEALTH, Linda Clark. Pyra-
mid Publications, 1972, New York

HOMEOPATHIC MEDICINE, Harris L. Coulter.
American Fdn. for Homeopathy, 910 17th St., NW,
Washington, D.C.

THE HUMAN MIND AND CANCER, Masaharu
Taniguchi. Available Seicho-No-Ie., Inc. 14527 Ver-
mont Ave., Gardena, California 90247

LOW-LEVEL RADIATION, Ernest J. Sternglass. Ballantine Books, 1972, New York

MORE ABOUT BIOCHEMISTRY, Mira Louise. Available Harmony Bookshop, P.O. Box 115, New Castle, Pa. 16103

MY IVORY CELLAR, John N. Ott. Devin-Adair, 1971, Old Greenwich, Conn.

PERILS OF THE PEACEFUL ATOM, Richard Curtis & Elizabeth Hogan. Ballantine Books, 1970, New York

POISONED POWER: The Case Against Nuclear Power Plants, J.W. Gofman & A. Tamplin. Rodale Press, 1971, Emmaus, Pa.

SECRETS OF HEALTH & BEAUTY, Linda Clark. Devin-Adair, 1969; pb. ed. Pyramid Bks., 1970, N.Y.

SILENT SLAUGHTER, Joel Griffiths & Richard Ballantine. Henry Regnery, 1973, Chicago

STAY YOUNG LONGER, Linda Clark. Devin-Adair, 1961; pb. ed. Pyramid Bks., 1968, N.Y.

SURVIVAL IN THE ATOMIC AGE, Mira Louise, Adelaide, Australia, 1960. Available Harmony Bookshop, P.O. Box 115, New Castle, Pa. 16103