

## ***Ions Can Do Strange Things To You***

*Researchers believe that through control of the electrical charges in the air we breathe, our moods, energy and health can be markedly improved.*

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*Robert O'Brian*

One sweltering day in Philadelphia this summer a man sat before a small metal box resting atop a hospital file cabinet. It was plugged into an ordinary wall socket. A doctor flipped a switch. Inside the box a small fan whirred; the box hummed distantly, like a high-tension wire, and gave off a faint, sweetish odor. Soon the man felt alert, magical, refreshed, as though he had been taking deep gulps of sparkling October air. The doctor turned the machine off, switched on another that looked just like it. The air grew quickly stale. The man's head felt stuffy. His eyes smarted. His head began to ache. He felt vaguely depressed and tired.

With this simple experiment, the scientist, Dr. Igho H. Kornblueh, of the American institute of Medical Climatology, demonstrated the effect that atmospheric ions can have on human beings. The first machine generated negative ions; the second positive ions.

The air around us is filled with these electrically charged particles. They are generated in invisible billions by cosmic rays, radioactive elements in the soil, ultraviolet radiation, storms, waterfall, winds, the friction of blowing sand or dust. Every time we draw a breath they fill our lungs and are carried by the blood to our body cells. They appear to have a lot to do with such varied things as our moods, why cattle grow skittish before a storm, why rheumatic joints "tingle" when the barometer falls, and how ants know in advance that it's going to rain, in time to block their tunnels.

Falling barometric pressure and hot, dry, seasonal winds, such as the Alpine *Fohn* and the Rocky Mountain *Chinook*, for example, pack the air with an excess of positive ions. Not everyone is affected; healthy young people swiftly adapt to the change. But countless others are distressed. The aged come down with respiratory complaints, aching joints; asthma sufferers wheeze and gasp; children grow cranky and perverse; crime and suicide rates climb.

On the other hand, a preponderance of negative ions spices the air with exhilarating freshness. We feel on top of the world. Dr. C. W. Hansell, research fellow at RCA Laboratories and an international authority on ionization, illustrates the effect with a story about his ten-year-old daughter. "We were outside, watching the approach of a thunderstorm. I knew that clouds of negative ions were filling the air. Suddenly my daughter began to dance across the grass, a radiant look in her face. She leaped up on a low boulder, threw her arms wide to the dark sky, and cried. 'Oh, I feel wonderful!'"

Negative ions "cure" nothing that we know of, at most afford relief only so long as one inhales them. Many doctors doubt their therapeutic effects. But there is a growing army of people who swear by them.

At the University of Pennsylvania's Graduate Hospital and at Northeastern and Frankford hospitals in Philadelphia, Dr. Kornblueh and his associates have administered negative-ion treatments to hundreds of patients suffering from hay fever or bronchial asthma. Of the total, 63 percent have experienced partial to total relief. "They come in sneezing, eyes watering, noses itching, worn out from lack of sleep, so miserable they can hardly walk," one doctor told me. "Fifteen minutes in front of the negative-ion machine and they feel so much better they don't want to leave."

It was RCA's Dr. Hansell who, in 1932, stumbled upon the behavioral effects of artificially generated ions. He noticed a startling swing in the moods of a fellow RCA scientist who worked beside an electrostatic generator. Some days the scientist finished work alert and in bubbling good spirits. On other days he was rude, ill-tempered, depressed. Dr. Hansell investigated and found that the scientist was happy when the generator was adjusted to produce negative ions, morose when it was producing positive ions. A few months later, reports of ionization research in Europe confirmed the strange experience.

A few years ago atmospheric ions became suddenly important to military, researchers in environmental medicine. How would they affect men locked in submarines? In space ships? What were the possibilities of ions therapy? Research programs multiplied, with fantastic results.

In Philadelphia Dr. Kornbluh studied brain-wave patterns and found evidence that negative ions tranquilized persons in severe pain. In one dramatic test he held a negative ionizer to the nose and mouth of a factory worker who had been rushed to Northeastern Hospital with second-degree steam burns on his back and legs. In minutes the pain was gone. Morphine, customarily administered in such cases, was never necessary.

Today all burn cases at Northeastern are immediately put in a windowless, ion conditioned room. In ten minutes, usually, the pain has gone. Patients are left in the room for 30 minutes. The treatment is repeated three times every 24 hours. In 85 percents of the cases no pain-deadening narcotics are needed. Says Northeastern's Dr. Robert McGowan, "Negative ions make burns dry out faster, heal faster and with less scarring. They also reduce the need for skin-grafting. They make the patient more optimistic. He sleeps better."

Encouraged by this success in burn therapy, Dr. Kornbluh, Dr. J. R. Minehart, Northeastern's chief surgeon, and his associate Dr. T. A. David boldly tried negative ions in relief of deep, postoperative pain. During an eight month test period they exposed 138 patients to negative ions on the first and second days after surgery. Dr. Kornbluh has just announced the results at a London congress of bioclimatologists. In 79 cases 57 percent of the total negative ions eliminated or drastically reduced pain. "At first," says Dr. Minehart, "I thought it was voodoo. Now I'm convinced that it's real and revolutionary."

Experiments by Dr. Albert P. Krueger and Dr. Richard F. Smith at the University of California have shown how ionization affects those sensitive to airborne allergens. Our bronchial tubes and trachea, or windpipe, are lined with tiny filaments called cilia. The cilia normally maintain a whip like motion of about 900 beats a minute. Together with mucus, they keep our air passages free of dust and pollen. Krueger and Smith exposed tracheal tissue to negative ions, found that the ciliary beat was speeded up 1200 a minute and that mucus flow was increased. Doses of positive ions produced the opposite effect: ciliary beat slowed to 600 a minute or less; the flow of mucus dropped.

In experiments that may prove important in cancer research. Drs. Krueger and Smith also discovered that cigarette smoke slows down the cilia and impairs their ability to clear foreign, and possibly carcinogenic (cancer-inducing), substances from the lungs. Positive ions, administered along with cigarette smoke, lowered the ciliary beat as before, but from three to ten times faster than in normal air. Negative ions however, counteracted the effects of the smoke. Observed Dr. Krueger, "The agent in cigarette smoke that slows down the ciliary beat is not known. Whatever it may be, its action is effectively neutralized by negative ions, which raise the ciliary beat as well in a heavy atmosphere of cigarette smoke as they do in fresh air."

How do ions trip off our moods? Most authorities agree that ions act on our capacity to absorb and utilize oxygen. Negative ions in the blood stream accelerate the delivery of oxygen to our cells and tissues, frequently giving us the same euphoric jolt that we get from a few whiffs of straight oxygen. Positive ions slow down the delivery of oxygen, producing symptoms markedly like those in anoxia, or oxygen starvation. Researchers also believe that negative ions may stimulate the reticuloendothelial system; a group of defense cells in our bodies which marshal our resistance to disease.

Dr. Krueger predicts that we shall some day regulate the ion level indoors much as we now regulate temperature and humidity. Ironically, today's air-conditioned buildings, trains and planes frequently become supercharged with harmful positive ions because the metal blowers, filters and ducts of air-conditioning systems strip the air of negative ions before it reaches its destination. Says RCA's Dr. Hansell, "This explains why so many people in air conditioned spots feel depressed and have an urge to throw open a window."

Air conditioner manufacturers are designing new systems that increase negative ionization. The American Broadcasting Co. will equip its new 30 story New York City headquarters with ion control. Two national concerns, Philco and Emerson Electric, already have ion control air conditioning systems on the market. RCA, Westinghouse, General Electric and Carrier Corp. have similar products under study or development.

We still have much to learn about atmospheric ions . But researches believe that these magic bits of electricity, under artificial control, will soon be helping millions to healthier, happier, more productive lives.