Mankind has availed itself of the beneficial powers of magnetism for thousands of years perhaps not understanding the specific effects, but knowing curative results could be achieved. In ancient Africa, iron ore, called magnetite, was revered for its healing power. It was commonly ground up and used in foods, as well as for skin and hair treatments. An African bloodstone mine (red iron ore) more than 100,000 years old has been found.

Aristotle (third century B.C.) was the first person in recorded history to speak of the therapeutic properties of the magnet. Most of the old cultures, especially the Chinese, Indians, Egyptians, Arabs and Hebrews, knew of the use of magnets for curative purposes.

During Greek and Roman Times, around 200 B.C., a Greek physician named Galen found that pain from many different types of illnesses could be relieved by applying natural magnets, such as the lodestone, from which amulets, bracelets and other devices were made.

In the first century, the Chinese began documenting effects on health and disease related to variations in Earth's magnetic field, using very sensitive compasses to monitor changes in the earth. By the seventh century, these compasses were already highly sophisticated instruments.

A Persian physician, around 1000 A.D., wrote about using magnets to relieve muscle spasms and disorders such as gout. During the middle ages in Europe, physicians ground lodestone into powder and used it for both internal and external remedies.

In the 1600's, William Gilbert, physician to Queen Elizabeth, wrote a book on the nature of magnetism. The next century, another physician named Franz Anton Mesmer wrote a dissertation on magnetism and has proven to be a foundation for magnetic healing in the Western culture. Although he was ridiculed by some of the medical community, later
scientific discoveries show Mesmer was a sincere researcher years ahead of his time.

The first in-depth study of the history of magnetic treatment of diseases was undertaken by France's Royal Society of Medicine in 1777. Even in concurring the magnet was destined to fulfill as crucial a role in medicine as it then filled in physics, they could not have known that scientists and precision instruments in the late 20th century would reveal magnetism to be one of the greatest new horizons in modern medicine and health.

Danish physicist H.C. Orsted discovered in 1820 that electricity and magnetism were inexorably linked. By the mid nineteenth century DuBois-Reymond had proven the body itself produced electrical impulses.

Benjamin Franklin, although popularized for his other diverse accomplishments, was an important scientist and among the early advocates of "medical electricit." Early pioneers in this field; Luigi Galvani and Allesandro Volta did much research on the biological effects of electricity. In 1924, Hans Berger became the first to actually measure electromagnetic brain waves (EEG).

In 1936, researcher Albert Davis discovered that the north and south poles of a magnet had different biological effects. He proved that the south pole of a magnet stimulated plant growth, animal behavior and biological activity, while the north pole calmed these functions. He found the north pole slowed the growth of bacteria, reduced pain and inflammation, and increased the alkalinity of a solution. Certain ailments were shown to worsen with application of the wrong polarity. As early as 1948, Red Army doctors were using magnets to reduce pain after amputation of limbs.

MODERN DAY MAGNETIC THERAPY:

REDISCOVERY OF A LOST ART

Today, continuing scientific research in France, Russia, England, Canada, Germany, India, China, Japan and the United States is providing invaluable data on how magnetic fields affect the nervous and circulatory systems, as well as every living cell - animal, human and plant.

Even the most conservative of medical philosophies has yielded to scientific evidence
documented by ultra-sensitive measuring instruments and acknowledges the human body is indeed electrical in nature and responds to minute magnetic/electrical changes.

It should be made clear that magnets themselves do not heal anything - they only stimulate the body to heal itself. Magnetism is a wholly natural event. It is neither magic nor medicine. It merely allows body cells to exist at their best level.

Following the early 1970's discovery that muscles could be strengthened or weakened according to stimuli applied to the body (the testing procedure has become known as "Applied Kinesiology"), Dr. Richard Broeringmeyer documented that muscle testing can be used to accurately diagnose functioning of all body glands and organs. He also found that any muscle will test strong or weak when a magnetic field is applied to the corresponding malfunctioning gland, organ or body part.

At the Manomet Medical Clinic in Plymouth, Massachusetts, Dr. Buryl Payne documented many case histories involving the power of magnetic fields to stimulate the body's natural healing processes. Among them:

A woman with much difficulty walking and in pain for four years following having both feet broken in an auto accident. After four hours of magnetic treatment over a 14-day period, she was delighted to not only walk freely but also to dance!

A woman with severe arthritis, in pain and unable to walk without a cane. After seven hours of magnetic treatment over three weeks of time, she was pain free and no longer needed a cane.

Doctors in both Europe and the United States are jubilant over results obtained in applying electric fields to tissue damage ranging from diabetic ulcers to severe burns. Their "stunning successes" promise electrical stimulation will become as common a method for healing soft tissue as it is for healing nonunion fractures.

In Europe, a magnetic foil (applied like a healing plaster) is widely used for pain relief in areas of the neck, back and joints. At the University of Leeds in England, researcher D.H. Wilson has successfully used electric pulses to regenerate nerves in animals.

In Sweden, radiologist Dr. Bjhorn Nordenstrom has treated scores of lung and breast
cancer patients with electrical stimulation.

The April 1988 issue of *Magnets in Your Future* reports the work of Dr. Goesta Wollin and his successful super-magnet treatment of three cases of breast cancer. *Many biomagnetic researchers believe this therapy is expected to revolutionize the field of cancer treatment.*

Since 1983, a Washington dentist, Dr. Jack Prince, has successfully used magnets on acupuncture points to reduce bleeding, gagging and pain sensitivity. He also found the magnets bring immediate relief from chronic pain from jaw dislocation. As a "holistic" practitioner regarded as a maverick by orthodox dentists, he has found much success using magnets to treat improved hearing, headaches, teeth-grinding and menstrual discomfort. Case histories of his magnetic treatments have been published in the *American Journal of Acupuncture.* (Magnetic therapy has been termed by some as acupuncture without needles.)

Among the leading edge instruments and tools related to the body's biomagnetic field and being used in modern hospitals and laboratories are:

a. SQUID (Superconducting Quantum Interference Device) which can detect minute changes in biomagnetic fields around body organs and thus diagnose disease.

b. MEGS or magnetoencephalograms, similar to the EEG.

c. MKG or magnetocardiogram, similar to EKG.

d. Bio-Magnetic Pulsar, used in more than 1,000 hospitals, colleges and health care offices to administer PMG (pulsed magnetic field therapy) to relieve deep muscle pain, stiffness, sore throats, colds, arthritis and other problems.

**A MAGNETIC FIELD FOR EVERY BODY**

Since 1957 in Japan, Dr. Kyoichi Nakagawa has been one of the world's most foremost researchers in the field of magnetic treatment of diseases - seen by many as the greatest new frontier in modern medicine. Beginning with such rudimentary techniques as physically attaching small magnets to specific body parts to eliminate pain or other symptoms, Dr. Nakagawa's efforts led to precise and successful hospital treatment of thou-
sands of patients with both specific and non-specific, undiagnosed ailments.

The passion of his lifelong dedication has led to the development by a Japanese company of a precision-manufactured futon sleep system with small, specially designed north and south polarity magnets positioned throughout the sleeping pad, pillow and down comforter. The bed is structured for optimum support of the body and spine, and its unique magnetic design is now patented in 19 countries with others pending.

Although science cannot yet fully explain what takes place when the body is placed within such a magnetic sleep system, kinesiology testing shows each meridian in the body functioning in harmony within 15 minutes. It logically follows that the longer a body remains in this environment, the more quickly it can realign itself.

According to the manufacturer of this magnetic futon system, the magnetic field created is approximately of the same intensity as the Earth's own magnetic field some 500 to 1000 years ago. The May 1988 issue of Scientific American magazine details today's ongoing degrading of Earth's once powerful magnetic field, which is now measured at only about 50% of its intensity several centuries ago. Scientists have calculated if this degradation continues at its present rate, there will not be a sufficient magnetic field to support life within 1500 years.

Interestingly, certain locales on Earth have inexplicably retained the strength of their magnetic fields. Among them, areas near Sedona, Arizona, and Lourdes, France destinations to which countless persons travel annually to experience feelings of well being and to seek healing.

Also from the Far East, a Chinese company is now internationally distributing a bandage-sized polymer membrane (Electro Membrane) that delivers a low level electrical charge to an injured or painful area. Case histories show remarkable results in alleviating inflammation and pain in both acute and chronic conditions. As with magnetic therapies, this method of treatment does not "heal," but stimulates the body's electrical system to allow the body's own mechanisms to begin repairing the body.

THE PRACTICAL AND THE "MIRACULOUS" APPLICATIONS

In both East and West, recent years have seen academic and scientific circles widely ac-
cecting the developments in healing through electrical and magnetic therapies. In the United States alone, *tens of thousands* of patients with very diverse conditions have already been treated with such electrical stimulation.

Some of the earlier investigations into magnetism in the western world began almost accidentally when people returning from several months at the South Pole found *arthritic conditions relieved* for up to two to three years.

Efforts to *duplicate* these results first focused unsuccessfully on refrigeration therapies, but eventually moved to *magnetism*. They found magnetic treatments *not only helped arthritic, but aided recovery of sprains, twists, broken bones and cuts* - *and healed them better and more quickly, with less scar tissue and better symmetry*.

In the Soviet Union, more than 2,000 reports on Magneto-Biology, as it's called there, have been published in professional journals. *Russian doctors regularly use magnets to speed wound healing after surgery, to improve circulation and to strengthen bones.*

At Columbia University's Orthopedic Hospital of Presbyterian Medical Center in New York City, Dr. Andrew Bassett is one of America's most noted researchers in magnetic (electric) therapies. It is largely through his 11 efforts that many of today's athletes as well as adults and children of all ages with conditions not yielding to traditional treatments can avail themselves of this state of the art magnetic therapy to hasten the healing of injuries and fractures. Recovery time can be reduced by half or more.

Dr. Bassett has achieved dramatic results using electric therapy of hip joint injuries or breaks. Commonly, victims are stricken with pain, disability and arthritis as blood supplies to the area are cut off. With electric stimulation, patients have experienced regeneration of tissue, nerve, bone and blood supply.

A Food and Drug Administration evaluation of these cases showed that approximately 85% of these hip injury patients would have needed hip replacement without the electric therapy. As the breakthroughs in bioelectric medicine become available to everyone, *fewer than 10% of such patients will need to face this high-risk surgery.*

The *Reader's Digest*, in an October 1982 article titled "Biomagnetism: An Awesome Force in our Lives," quoted Dr. Bassett as predicting, "*Electricity will become as ubiquitous in*
medical practice as surgery or drugs are; in many instances it will replace them."

Dr. Robert O. Becker, surgeon, author and former professor of orthopedic surgery at the Upstate Medical Center in New York, is another highly respected pioneer in magnetic/electrical therapy in America. His book, *The Body Electric*, published in 1985 by Wm. Morrow, has been a major milestone in educating the public about these "new" frontiers with ancient beginnings.

Dr. Becker, envisioning amazing magnetic possibilities for the future, is quoted in the June 1986 issue of *East West*, as declaring, "Think of the implications for medicine... to heal injuries that we can't repair now, such as a severed spinal cord or damage to the heart muscle, injuries that almost never heal effectively."

The earth produces its own direct current (DC) magnetic pulses that support the natural biorhythms of all living things. However, scientists are becoming increasingly alarmed that the present-day magnetic field of the earth is only about 50% of what it was some 500 - 1000 years ago, with a full 5% decline being recorded in the past 100 years.

A radiation researcher at Arizona State University believes that ordinary 60 cycle household AC electricity and higher frequencies such as those from radio broadcasts and radar can cause memory loss, headaches, changes in heart rate and blood chemistry and general malaise.

European scientists report such daily exposure is cumulative and contributes to sluggishness, headaches, and both digestive and circulatory problems. At the University of Colorado in Boulder, Dr. Nancy Wertheimer has reported increased cancer among children in "high current" dwellings.

According to Dr. William Adey, a cancer researcher who spoke recently to a House Subcommittee, this "electronic smog" can block the brain's electromagnetic signals to the cells, thereby undermining the body's disease-fighting ability and promoting tumors.

Dr. Robert O. Becker, M.D., one of America's pioneers in the field of research on regeneration and electrical currents in living things, has achieved what have been termed "miraculous" results in healing with magnetic therapy. He has gone so far as to specu-
late that electropollution, in addition to causing some cancers, may be contributing to the onslaught of such maladies as Reye's syndrome, Lyme disease, Legionnaire's disease, and AIDS.

On December 4, 1976, the Japan Medical Journal (No. 2745) published a far reaching paper titled "Magnetic Field Deficiency Syndrome and Magnetic Treatment" authored by Kyoichi Nakagawa, M.D., one of the world's foremost authorities on magnetism and its therapeutic effects on the human body.

According to Dr. Nakagawa, the continuing degrading of Earth's magnetic field, combined with man's electronic environment, is responsible for a broad range of ailments, including "stiffness of the shoulders, back and 'scruff' of the neck; uncertain lumbago; chest pains for no specific reason; habitual headache and heaviness of the head; dizziness and insomnia for uncertain reasons; habitual constipation; general lassitude, etc."

Another scientist whose comprehensive studies of magnetic fields and healing have been widely published is Physicist/Psychologist Dr. Buryl Payne, former professor at Boston University and Goddard College and inventor-designer of the first biofeedback instruments that are now sold by Radio Shack and Thought Technology.

According to Dr. Payne, sensitive research instruments have allowed scientists to document some of the ways magnetic fields affect living organisms. He cites specific factors now known to be involved in magnetic healing. Among them:

1. Increased blood flow with resultant increased oxygen carrying capacity, both of which are basic to helping the body heal itself.

2. Changes in migration of calcium ions - adequate magnetic polarities can either bring calcium ions to heal a broken bone in half the usual time, or can help move calcium away from painful, arthritic joints.

3. The pH balance (acid/alkaline) of various body fluids (often out of balance in conjunction with illness or abnormal condition) can apparently be altered by magnetic fields.

4. Hormone production from the endocrine glands (essential to health) can be either in-
creased or decreased by magnetic field stimulation.

5 Altering of enzyme activity and other biochemical processes.

As an example of specific effects created when a magnetic field is applied to the body, below are typical changes that have been documented:

a. Electricity is generated in blood vessels

b. Ionized particles increase in blood

c. Autonomic nerves are excited

d. Circulation is improved

To better understand the implications of providing the body with an adequate magnetic environment, it is important to understand the basic movement of certain body fluids and their role in health and disease.

In a somewhat simplified explanation, as the heart pumps approximately 80 times per minute, blood in the arteries forces nutrient-laden liquid through pores in the capillaries into the cell area to nourish the cells. (This liquid is called plasma while it is in the bloodstream and is renamed "lymph" once it leaves the bloodstream.)

The blood proteins (fibrinogen, albumin and globulin) in the blood vessels have a high affinity for water and aid in pulling liquid back into the blood vessels. Through the venous system, the "used blood" is returned to the heart and lungs for purification.

Because the body itself, and each individual cell is an electrical generator, the cells must have oxygen to convert glucose into energy, and the balance of potassium/sodium within each cell must remain correct to keep the generators going.

Even under ordinary conditions, the normal blood pressure causes some of the blood proteins to continually seep through the tiny capillary pores into the spaces around the cells. There is not enough pressure in the cells to push these proteins back through the pores, so they must be continually removed and returned to the blood stream via the lymphatic system.
The body has twice as much lymph as blood, and twice as many lymph vessels as blood vessels. The lymphatic system has one-way check valves that keep the fluids going only in one direction. Many years of research and clinical application have shown that the simple introduction of a magnetic field can provide stimulation of not only the lymphatic system, but of every cell within the body as well. The magnetic field does not heal - it merely aids the cells in creating an optimum environment in which the body can begin to heal itself.

Many bio-magnetic practitioners are now offering education, treatment, and magnetic devices to those seeking alternative health care. Among the most viable of these options is a magnetic sleep system developed over more than 30 years of clinical testing by a doctor in Japan. Users are able to sleep nightly within a cocoon of balanced magnetic energy to revitalize their bodies, with the system providing ongoing effectiveness levels.

In the early 1970's, Scientist James Zimmerman of the National Bureau of Standards in Colorado invented a revolutionary device able to make extremely minute detections in electromagnetic fields around the body's organs - thus providing a powerful, new tool for diagnosis of disease. The device is called SQUID, for Superconducting Quantum Interference Device, and is now a prized piece of diagnostic equipment at many hospitals.

Around the world, research on the therapeutic potential of magnetism is continuing, and the publication, Journal of Bioelectricity, is devoted to the field. Among the places where this leading edge technology is being studied are Loma Linda University in San Diego-, New York University, the Massachusetts Institute of Technology; The Institute for Magnetotherapy in Madras, India; the University of Leeds in England; the University of Colorado, the University of South Carolina in Columbia, the University of California in San Francisco, Columbia University in New York; and scores of other laboratories and institutions in Japan, Germany, Sweden and other nations.