

Flip side of 'winter depression'

Recent studies find that the symptoms of some depressed patients are linked to the shorter daylight and extended indoor periods of the fall and winter months. Treatment with artificial bright light often dampens this type of depression (SN:3/9/85, p. 152).

But according to two psychiatrists who have treated light-sensitive patients, the disorder is more than "winter depression"; it stretches into the summer, too. While such persons generally slow down, experience depressed feelings, oversleep and overeat in the fall and winter, they become agitated, impulsive and violent and even suffer short bouts of psychosis in the spring and summer. Summer symptoms, report Peter S. Mueller and Robert K. Davies of Fair Oaks Hospital in Summit, N.J., are often brought on or made worse by treatment with the "full-spectrum" lights that ease winter symptoms.

They add that the use of "rose-gradient" glasses in the fall and winter works as well as or better than the bright lights commonly employed with these patients. Both techniques increase exposure to red-spectrum light. Spring-summer symptoms, they say, are best relieved by blue-green polarized glasses that cut exposure to long-spectrum visible light.

In the February ARCHIVES OF GENERAL PSYCHIATRY, the researchers dub the year-round disorder "seasonal energy syndrome." Of 47 patients they have studied with seasonal mood swings, 17 have been hospitalized for a total of 71 admissions. Only 20 admissions occurred between September and February. Although the patients' behavior mimics a form of manic depression, say Mueller and Davies, their symptoms, which also include migraine headaches and minor neurological problems, encompass a separate disorder.

"Winter depression" does indeed show another face in the spring and summer, responds psychiatrist Norman E. Rosenthal in the same issue, but the seasonal swings can often be diagnosed as a type of manic depression. Of 156 patients with seasonal mood changes studied by Rosenthal and his colleagues at the National Institute of Mental Health in Bethesda, Md., 90 percent have been classified as manic depressive.

The effects of looking at the world through rose-colored or blue-green polarized glasses are far from clear, adds Rosenthal. Researchers need to examine how light of different wavelengths may alter behavior at different times of the year, he asserts, while controlling for the intensity of the light transmitted and avoiding the placebo effect (improvement not due to the specific treatment). Even after demonstrating the antidepressant effects of bright light in a number of independent samples, observes Rosenthal, "we cannot exclude the placebo effect with certainty."

The darkest month is just before dawn

An early and unintended study of seasonal depression was conducted at the turn of the century on an ice-bound ship, notes psychiatrist James W. Jefferson in the February AMERICAN JOURNAL OF PSYCHIATRY. In 1898, the *Belgica* and her crew of 19 were trapped in the Antarctic ice pack for 347 days. They had to endure the Antarctic winter's 68 continuous days of darkness. Jefferson, of the University of Wisconsin in Madison, noticed the written observations of ship's physician Frederick Cook in a book about the frozen continent (*Antarctica: The Last Continent*, I. Cameron, 1974). "Gradually the members of the expedition became affected, body and soul, with languor," wrote Cook. "Bright artificial lights relieve this to some extent; but all animal organism is left in a condition similar to that of a planet deprived of direct sunlight. . . . The best substitute to the sun is direct rays of heat from an open fire."

One can only wonder what this resourceful physician could have done with a supply of rose-colored glasses.

The mystery of the magnetic doors

According to Chinese legend, a tomb located near the town of Sian and belonging to the first emperor of the Ch'in dynasty (221-206 BC) had a door that could not be cut with iron swords because the door magnetically attracted the iron. Moreover, in a newly discovered volume of an encyclopedia compiled in China in 1406, scholars found passages indicating that the gates of a nearby palace were also made of magnetic stone: "Warriors wearing iron armor were detained or attracted and could not pass through."

Now scientists think they have a clue to the origin of this magnetic stone. In a letter appearing in the Feb. 13 NATURE, Tai Li-Chi of the Research Institute of Iron and Steel in Beijing reports that a colleague discovered that the sand along the banks of the Wei River, which passes by Sian, can be used as ferrite material with good magnetic properties. Tai analyzed the sands and found that they contain magnetite and other magnetic oxides. "The quality of the material is not inferior to the synthetic oxides used in the manufacture of ferrite in modern industry," he says. But, he concludes, "we have not yet found any direct evidence that this magnetic sand was [indeed] used in ancient times."

Signs of New Zealand monster volcano

Scientists have discovered traces of what they think is one of the largest documented volcanic eruptions in the Southern Hemisphere. As reported in the Feb. 13 NATURE, P.C. Froggatt at Victoria University of Wellington in New Zealand and co-workers sampled, in marine sediment cores, a thick, widespread ash layer from New Zealand's Taupo volcano, which erupted about 254,000 years ago.

Estimates for the total ejected volcanic material make "this Taupo eruption the largest in the Southern Hemisphere in late Quaternary times [the last 2 or 3 million years]," they say. The dispersal of the ash indicates that the ash reached into the stratosphere. The volcanic matter from Taupo "is so widespread that the eruption possibly caused disruption to the atmosphere and climate," the researchers conclude, "and material from this eruption may be recognizable in sediments 10,000 kilometers from the source."

Whole earth catalog of research

The view of the earth from space impressed upon scientists how intertwined are the planet's oceans, atmosphere, continents and life. "Indeed, it has become increasingly evident that the most scientifically challenging and socially important problems facing the environmental sciences lie at the interfaces between these components," writes Herbert Friedman of the National Research Council (NRC) in Washington, D.C., in the foreword to a recent NRC report entitled "Global Change in the Geosphere-Biosphere: Initial Priorities for an IGBP."

IGBP is the International Geosphere-Biosphere Program, a plan conceived over the last three years for an international, interdisciplinary, global-scale study of the earth. While there have been other important international research efforts in the past, none has focused so extensively on crossing the traditional lines between scientific disciplines. "We think the need for action is so great as to warrant the mounting of a bold new program, and the issues so urgent and compelling that it must be started now," concludes the U.S. Committee for an IGBP, which met in 1984 to outline the most compelling problems — such as the need for better documentation of the earth's climatic history and for better models of sea-air-land-sun dynamics — that would benefit from the IGBP approach. The committee's recommendations are going to the International Council of Scientific Unions, which, according to the report, is considering implementing an IGBP.