

the part of the sky easily visible from Chicago.

He had retired from his court work in 1902, and in 1913 he retired from scientific work. Then his mantle fell on Dr. Eric Doolittle, of the University of Pennsylvania, who was given all his data. Burnham died on March 11, 1921. But Doolittle had died in 1919, and then the material was turned over to Dr. Robert G. Aitken, now director emeritus of the Lick Observatory, and living in Berkeley, California, where he is continuing the compilation of data. He published, as the joint work of himself and Dr. Doolittle, a new catalog of double stars in 1930, which is the latest authority. However, Dr. Aitken is maintaining a card file on all the recorded binaries, and is keeping it up to date, so there is much new material which has not yet been published. It is, however, made freely available to interested astronomers.

On December 22, at 7:14 a. m., the

sun, which has been moving southward since last June, reaches the end of its journey. This is the winter solstice and marks the beginning of winter. On this day the sun rises and sets farthest to the south, and reaches its lowest noon-day height of the year. For this reason, it is above the horizon for the shortest time, and the 22nd is thus the year's shortest day. In the southern hemisphere, however, conditions are reversed. There it is the longest day and the beginning of summer.

**Phases of the Moon**

	E. S. T.
Full	Dec. 7 5:22 a. m.
Perigee—Distance	
224,200 miles	Dec. 8 8:00 p. m.
Last quarter	Dec. 13 8:17 p. m.
New Moon	Dec. 21 1:07 p. m.
Apogee—Distance	
252,400 miles	Dec. 24 2:00 p. m.
First quarter	Dec. 29 5:53 p. m.

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small animals that scientists believed this treatment was worth at least a trial on human cancerous growths.

"The success of the neutron ray in animal experimentation does not justify any conclusion that it will be necessarily more successful in treating human beings than X-rays," said Dr. John Lawrence, who, with Dr. Robert S. Stone, chief roentgenologist in the University's hospital in San Francisco, is directing the experiments. "It may be months or even years before any results are known and, until then, we can offer no additional hope to cancer sufferers."

Dr. Lawrence is the brother of Dr. E. O. Lawrence, noted physicist who developed the cyclotron and the neutron ray used on the cancer patients. The neutron rays are created by bombarding a target of a light metal, notably beryllium, with very energetic deuterons, which are the nuclei or ions of heavy hydrogen.

The rays produced by this method were found to have a sharply different effect on biological tissue cells than the X-ray, and it was this difference which led to the present clinical investigations.

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**PSYCHOLOGY**

**Strife Created in America By Advancing False Theories**

**C**HARGES that strife is being systematically created in the United States by pressure groups and their conflicting theories of social justice are made by Dr. Henry C. Link, of the Psychological Corporation, in a book, "The Rediscovery of Man" (Macmillan)

"Abstract ideas rather than personal passions, lines of thought rather than bread-lines are pushing this country toward violence," he said.

"Personal tragedy and defeat were once due to the individual's weakness or to physical circumstances beyond his control; today, with untold material advantages, even the most promising person is hamstrung by a formidable array of scientific and pseudo-scientific theories."

IQ tests, Dr. Link says, are a legitimate scientific device whose effectiveness has been curtailed by addition of a theory that undermines the confidence of parents, of children and even of the schools, in the possibility of training a mind. A defeatist attitude is adopted by persons who blame their failures on lack of aptitude, an "inferiority complex" or their glands.

The misconception of man as a mere victim of forces beyond his control has

**MEDICINE**

**Cyclotron Is Now Used In Treatment of Human Cancer**

**H**UMAN cancer sufferers are now being treated for the first time with neutron rays from the 85-ton, atom-smashing cyclotron of the University of California.

Announcement of this use of the cyclotron, which it is hoped will greatly advance the war against cancer, was made by Dr. Ludvig Hektoen, executive director of the National Advisory Cancer Council, adjunct of the U. S. Public Health Service, which has been in the forefront in supplying funds and

technical assistance for this newest assault on cancer.

Cancer sufferers throughout the nation are warned not to start for California in the hope of getting treated by the cyclotron. The treatments are purely experimental and no successful outcome can be promised. Only a small group of patients from the University of California's teaching hospital in San Francisco are being treated. The cyclotron's neutron rays have been so effective in treating cancerous growths on



been in the making for 300 years, Dr. Link explained. Physics and chemistry provided a mechanistic concept of the universe. Biology repeats much the same story. Astronomy reveals a universe in which man is an infinitesimal dot of little consequence.

"This degrading concept of man reaches its climax in the teachings of our social studies, economics, sociology, political science, anthropology," Dr. Link asserted. "Men and women, these studies assert with confidence, are the victims of their economic environment.

They are helpless in the clutches of a soulless economic system."

The assumption that people cannot be led or encouraged to help themselves, therefore they must be taken care of like cattle by some great, automatic social plan is the "foundation for fascism both as it exists abroad and as it is being prepared by the organized social trends in America."

"This definition of man," Dr. Link declared, "psychologists are finding, is not only horribly degrading but fundamentally untrue."

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MEDICINE

## Nicotinic Acid Hailed For Results in Curing Pellagra

### Violently Demented Patients Are Restored to Sanity Within From One to Six Days of This Treatment

**D**ETAILS of the nicotinic acid cure for pellagra, known as the South's hard-times disease because it follows slumps in the cotton market and other economic disasters in Dixie, were related to southern doctors at the meetings of the American Society of Tropical Medicine and the southern branch of the American Public Health Association. They heard how a small daily dose of this acid cures the fiery tongue, the skin rash, the lack of appetite and the dementia of pellagra.

Violently demented pellagra patients were restored to sanity within from one to six days of nicotinic acid treatment, Dr. Tom D. Spies of Cincinnati reported. Associated with Dr. Spies in the pellagra studies are Drs. William Bennett Bean and Jean M. Grant of Cincinnati,

Robert E. Stone of Chapel Hill, N. C., and James B. McLester of Birmingham, Ala.

Mentally sick patients whose sickness is not due to pellagra cannot hope to be restored to sanity by nicotinic acid treatment, Dr. Spies emphasized.

A well-balanced diet must be followed along with nicotinic acid in the routine treatment of pellagra, Drs. Julian M. Ruffin and David T. Smith of Duke University School of Medicine, Durham, N. C., told fellow physicians. The Duke University physicians were among the pioneers in the use of this treatment for pellagra.

Pellagra comes from eating a poor diet. Scientists have known this for some years, and have also known that yeast, liver, red meat and fresh vegetables contained

the substance necessary to cure or prevent pellagra. The diet of large portions of the South's population was completely lacking in all these foods during periods of hard times. The pellagra preventing substance was at first labelled vitamin B<sub>2</sub>. Now, thanks to the work of Dr. C. A. Elvehjem and associates at the University of Wisconsin, it is known that the vitamin which cures pellagra is nicotinic acid.

It is not yet known whether nicotinic acid alone will prevent pellagra in persons eating a poor diet. Dr. Spies and associates are giving nicotinic acid to several hundred pellagra patients in Birmingham to find out about this.

Warning against too large doses of nicotinic acid were given by both Dr. Ruffin and Dr. Spies. Normal persons to whom Dr. Ruffin gave large doses of the acid became quite sick with extreme mental depression. Dr. Spies stated that not enough is known of the effects of a super optimal supply of the vitamin to warrant using it "in staple foods or as a national tonic," as has been suggested.

Nicotinic acid does not cure either the peripheral neuritis or the anemia of pellagra patients. These are due to other deficiencies of the diet and need other treatment.


For the neuritis, vitamin B<sub>1</sub>, now known as the chemical, thiamin, is needed. This is the anti-beri-beri vitamin. The difficulty in distinguishing nerve damage in pellagra, due to lack of nicotinic acid, from nerve damage due to lack of thiamin was discussed by Dr. George Cheever Shattuck of Harvard Medical School.

This vitamin, Dr. Shattuck pointed out, is widely distributed in nature and is closely associated with the body's utilization of sugars and starches. From these facts he concludes that the effects of deficiency of this vitamin may be "more numerous and widespread in man than has hitherto been recognized." Dr. Shattuck advised caution, however, in drawing sweeping conclusions on the subject and said that vitamin B<sub>1</sub> or thiamin should "certainly not be advertised as a 'cure-all.'"

### Body May Starve Invaders

**R**ESISTANCE to infectious diseases may be accomplished in our bodies by a process that starves out the invading organism that causes the infection.

Studies showing this self-starvation process is actually what builds up immunity to a rat ailment similar to hookworm disease, cause of much debility



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