

GENERAL SCIENCE

# Science Does Not Make War But Peace and "Good Life"

SCIENCE, instead of promoting war, actually holds the key to the ultimate solution of the problem of peace, Dr. C. C. Furnas, Yale professor of chemical engineering and author of "The Next Hundred Years," told the American Institute of New York City in a recent address.

"It takes a long time view to believe this," he explained, "but it is true even if slow."

Some feel that science is merely an instrument of suicide because of its contribution to the deadliness of war, he said. The mob-stirring abilities of super-nationalistic maniacs does not seem to him to be dependent in any way upon the effectiveness of science. They can act more quickly than they used to but they will be eliminated more quickly too.

"Modern war with its destructive potentialities is no more destructive of life than the old-fashioned kind—with its attendant pestilence," Dr. Furnas continued. "The Thirty Years War with the crudest of weapons succeeded in laying waste to northern Europe and directly causing the death of between

eight and twelve million persons, more through starvation and pestilence than combat. A race bent on suicide will turn the trick if it has to resort entirely to stone axes.

"Modern equipment increases the speed of the reaction but doesn't change the final result. Science further holds this important ace—it has the ability to reduce economic pressure because productivity per man, per acre, per hour, per anything is rapidly increasing, hence in the long run there will be a gradual diminution of economic pressure in certain groups. Since Germany can and is making nitrate fertilizers from the air, artificial rubber from limestone and coke, motor fuels from coal, there is less high pressure demand for these commodities than there would otherwise be. The demands of peoples are gradually being limited to a few basic commodities such as coal, iron, lumber, cotton and potash. It simplifies the picture of international relations and demands and hence raises hopes of peaceful solutions.

"Economic pressure is one, if not almost the sole fundamental cause of

war. It is only through the application of science that we can hope to have a universal standard of living high enough to ease this pressure which is the virus of the greatest mental disease of the world."

Dr. Furnas said that science and technology are taking us toward a longer and better life and doing it relatively swiftly. If the world can for a short while keep the superpatriots from cutting the jugular vein of civilization, he believes we shall find applied science leading us into the wide rolling sea of the good life.

"Only the most rabid optimist could say that life is yet 'good' for the average man," he said, "but give us time and it will be. The critics of science are impatient. The scientists are just beginning to get steam up. With the help of the crowd, or perhaps in spite of it, they will soon begin going places."

Science News Letter, March 13, 1937

BIOGRAPHY

## Gregor Mendel Regarded His Life as a Failure

JOHANN Gregor Mendel, mitred abbot of the Monastery of St. Thomas in Brünn, founder of the modern science of genetics, rated himself as a failure. The "breaks" were against him from early boyhood, nothing that he undertook seemed to prosper, and his greatest apparent success only defeated the end which he hoped it would promote.

This somewhat gray picture of one of the most significant lives in the history of science was presented by Prof. Samuel W. Fernberger of the University of Pennsylvania in a discourse before the Franklin Institute of Philadelphia. That the world now universally acclaim Mendel can not really redress the balance, suggested Prof. Fernberger: "Posthumous praise is poor consolation indeed!"

Mendel's hard luck began with his father's bad judgment. The elder Mendel, an orchardist, had bought himself land-poor, so that when young Johann was sent away to school he had so little to eat, much of the time, that he was often ill. In later adolescence, he tried to work his way through college by tutoring, and didn't have a great deal of success at that.

He finally gave up hopes for a secular career, and presented himself at the Abbey of St. Thomas as a candidate for admission to the Order. Here he had his only two favorable



### GLOW IN BLACK LIGHT

Invisible light rays of ultra-violet are used at the Humboldt Mine, Mill City, Nev., to detect patches of scheelite, one of principal sources of tungsten. Frequently scheelite is nearly colorless and looks quite like the quartz with which it is associated. When irradiated with ultra-violet rays, it glows with characteristic fluorescence.

"breaks": the then ruling abbot was interested in natural science, especially botany, and encouraged the young novice; and after some years a shortage of priests brought about his ordination before his whole course was completed.

But his ill luck caught up with him at once. He was temperamentally unsuited for the pastoral work to which he was assigned. Visiting the sick and dying depressed him to the point of positive physical illness; he had to give it up.

Then his abbot set him to work as a substitute teacher. This work agreed with him. He took the state examinations for certification as a full-fledged high school teacher—and failed ignominiously. His abbot saw to it that he got some university training. He tried again—and again failed. He gave up the effort, and for twenty years continued teaching with only the rank of substitute.

### A Buried Revolution

It was during these teaching years that Mendel conducted his numerous scientific activities, including the work on garden peas that now writes his name in the stars of science's sky. But even here misfortune continued to dog him. Nobody paid any attention to his results when they were published, and they remained buried for a generation before their rediscovery and proper appraisal.

The abbacy becoming vacant, Mendel became a candidate, thinking that in this position he would have more time for research. Instead, he had to become a hard-pressed business manager for the monastery property—with a bitter tax fight on his hands to boot.

When he lay dying, in 1884, he wrote his own obituary notice for the press. In it he mentioned that he had been a mitred abbot and that the Emperor had conferred a decoration upon him. But he said nothing whatever about having once planted peas in a garden.

*Science News Letter, March 13, 1937*

### METALLURGY

## Aluminum Horseshoes Made for Race Horses

RACE horses in Germany can now wear aluminum shoes which weigh less than three ounces. Made of aluminum specially hardened, they are said to wear almost as well as the ordinary iron kind.

*Science News Letter, March 13, 1937*

### GENERAL SCIENCE

# Less Spent on Cancer Study Than on Major Football Game

## Danger of Postponing Medical Examination in Suspected Cases Emphasized by Harvard Medical Faculty Member

IF WE as a nation were willing to spend on cancer study what we spend on luxuries, invaluable knowledge could be added to science's meager understanding of this merciless scourge, now the second chief cause of death, Prof. William T. Salter of the Harvard Medical School declared.

Statistics compiled by the International Cancer Research Foundation, he said, indicate that the total sum expended annually for cancer research in America is probably less than that spent on one major football game. Indeed, the budget of a single great American industry for research in new problems last year was about twenty times our national expenditure for cancer research.

Yet every day doctors hear the pathetic query, "Why isn't more known about the cause and prevention of cancer?" And they will keep on hearing that question, he emphasized, until permanent scientific positions and laboratories are established for the careful and prolonged study of malignant growths. We are generous in providing care for hopeless cases, he said, but it is not easy to enlist support for cases yet unborn.

### Watch Earliest Symptoms

Like so many other calamities which beset mankind, cancer rarely comes to mind until disaster is imminent. Chief progress during the last decade, he said, has been medicine's effort to correct this fault, to educate the people in the early symptoms of cancer.

"Intelligent people," he said, "now realize that cancer is rarely painful at its inception and that the appearance of a lump or tumor or of an unusual discharge may indicate cancer and must be investigated at once by a competent doctor. Indeed this widespread publicity has raised two secondary problems, the better training of practitioners in the recognition of incipient cancer and the equipping of properly staffed tumor clinics for treatment and for special diagnostic procedures."

There still remains much misapprehension about the disease, he continued,

largely due to the failure of people to realize there are many varieties of cancer.

"Some are relatively benign, while others are rapidly fatal," he explained. "One of the great aids in distinguishing between these types is the microscopic examination of a small bit of the tumor removed for classification. Failure to perform this biopsy has led to many mistakes in the past. Patients have mistakenly been told that they had cancer and had little time left to live, while others have been told they had 'nothing serious' when actually a malignant growth was present.

"Patients who refuse to have a specimen removed for examination by a reliable surgeon and studied by a skilled pathologist can scarcely hope for intelligent treatment. Indeed, even when malignant tissue is obviously present, the examination is of value in deciding how dangerous the growth is, and will guide the surgeon in determin-

## RADIO

March 16, 5:15 p.m., E.S.T.

OUR PREHISTORIC ANCESTORS—  
Edgar B. Howard of the Philadelphia  
Academy of Natural Sciences.

March 23, 5:15 p.m., E.S.T.

LIFE IN THE LATE STONE AGE—  
Prof. V. Gordon Childe of the University  
of Edinburgh.

In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

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