

"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

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ing the type of treatment best suited to the case."

As to the cause of cancer, science still remains in the dark, he said. The best answer is simply that it is unknown, although a next best answer is that it is in some way associated with chronic irritation. A jagged tooth, for example, may produce chronic inflammation and a cancerous ulceration. Pipe irritation may bring cancer of the lip to an inveterate smoker. Perhaps some similar reason explains why sea-faring men and farmers are more prone to develop skin cancers than indoor workers. Likewise, chimney-sweepers used to develop skin-cancers from constant irritation of the skin which may become cancerous.

As to what part inheritance may play in human susceptibility to cancer, science is also pretty much in the dark, Dr. Salter admitted.

"Although it is true that mice can be bred, brother to sister, so that eventually all the animals of that strain die of cancer, human beings are such mongrels (from the mouse's point of view) that there is no very definite inheritable factor so far as individual patients are concerned. Indeed, individuals vary so much one from another, and their tumors vary so remarkably, that scientists are almost completely dependent upon animals for the detailed study of cancer and its peculiarities.

"By inoculating animals (chiefly pedigreed mice and rats) with tumors

it is possible to grow many cancers of a single type and thus make many detailed observations on the same kind of tissue. Only by this method can uniformly reliable experimental results be obtained. In this fashion it has been possible to show that cancer tissue is chemically different from other, normal tissues. It has even been found possible to produce artificially an immunity to cancer in laboratory animals under suitable conditions," he declared.

While there is no evidence that human cancer is "contagious," he continued, it has been possible to extract in the laboratory from growths in animals a juice or filterable virus, which produces a similar growth on injection into another animal. Several such extracts are known, each capable of producing a characteristic tumor in the appropriate species of animal. In recent years, he added, chemically pure substances have been made which also produce cancer on injection, but scientists are still trying to decide if there is any relation between these substances and cancer in human beings.

Concerning the "cure" of cancer, Dr. Salter said that many human cases are cured by surgical means or radium or X-ray treatment, with the visible cancers in general being more amenable to treatment. Likewise the less malignant cancers offer more hope of recovery than the more malignant ones.

Science News Letter, March 13, 1937



ON FRIENDLY TERMS

PALEONTOLOGY

225,000,000-Year-Old Bones Of Texas Reptile at Harvard

A COMPLETE fossil specimen of a long-spined Dimetrodon, one of the earliest of reptiles and apparently the commonest animal on earth about 225 million years ago, has recently been brought to Harvard University by Robert Witter of the Museum of Comparative Zoology.

It was found in the "red beds" of northwestern Texas, which have previously yielded numerous skeletons of the early Permian period, of which the Dimetrodon was characteristic.

Most spectacular feature of the eight-foot animal is a series of long, bony spines extending two feet upward from its back. There is evidence that in life these spines were connected by a web of skin to form a sort of sail.

The function of this sail, if any, is still a scientific puzzle. It was at one time thought to be used in frightening Dimetrodon's adversaries but general agreement that Dimetrodon was pretty much master of the earth in his day dispelled this guess.

The theory has also been advanced that it was used in swimming, either as a rudder or a sail, but the animal was primarily a land-dweller, so this idea has also been abandoned. Even if it had been usable as a sail the animal would probably have been too stupid to get any benefit from it, one scientist has pointed out, for its nearly foot-long skull encased a brain only about the size of a man's little finger.

Science News Letter, March 13, 1937

HERPETOLOGY

Snake Accepts Human Aid In Shedding His Skin

See Front Cover

ST. PATRICK himself could not have claimed less concern about serpents than Frank Garvin, S.J., of the Fordham University science faculty. If anything, matters would seem to have improved considerably since the days of Patrician legend; for here neither snake nor man had any fear for the other. The serpent, a big, husky gopher snake, was starting the difficult process of shedding his skin when Mr. Garvin proffered aid. The snake seemed to appreciate this human assistance in moulting, and submitted to handling without a sign of resentment. The discarded skin is shown on the front cover of this week's SCIENCE NEWS LETTER.

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The principal city of the Virgin Islands is no longer St. Thomas, but Charlotte Amalie, which is the old Danish name, revived by the people.