

MEDICINE

Surgeons Used Chloroform

► **HOW SURGEONS** at Gettysburg used a cow's horn packed with a chloroform sponge to deaden the pain of amputation is reported in an unusual historical medical article in the the New England Journal of Medicine, 269:23, 1963.

The amputations and probing for bullets took place in a stone farmhouse used as a field hospital under the direction of the famous Dr. John Shaw Billings. During the bloody fighting of July 2 and 3, 1863, before the hospital was re-established under tents, wounded men by the hundreds were laid in different parts of the house, the barn, the orchard and the space around the buildings.

A corner room of the old Jacob Weikert farm near Little Round Top was used as an operating room, and amputated limbs were thrown out the window where they were piled higher than the fence.

Dr. J. A. Curran, trustee and consultant, Bingham Associates Fund, Boston, said the exact location of the improvised field hospital had not been known until the present study, 100 years after the Battle of Gettysburg. He said he had been tracing the facts for ten years as a hobby.

Dr. Billings' letters to his wife and his official reports tell of setting up the field hospital in the farmhouse, which had been so recently evacuated by the owners that bread was ready for baking in the hot oven.

"I immediately set my attendants at work baking bread and heating large boilers of water," he reported. Other medical officers joined him and in 15 minutes the operating tables were set up.

"I performed a large number of operations of various kinds," he said, "received

and fed 750 wounded and worked all night without cessation."

Dr. Billings was not only one of the outstanding young surgeons in the Union Army, he later became one of the outstanding hospital consultants of his time. His plans for the construction of Johns Hopkins Hospital in Baltimore were accepted in 1875, and he spent the next 25 years supervising its building and development.

His concern over the control of infection, Dr. Curran points out, dated from his Civil War days, and inspired the "unique pattern of isolated pavilions at Hopkins and later at the Peter Bent Brigham Hospital in Boston."

During his 30-year term, beginning in 1864 as deputy surgeon general of the U.S. Army, Dr. Billings founded the Surgeon General's Library, which has now grown into the National Library of Medicine at Bethesda, Md. After his retirement from the Army in 1895 he organized and planned the construction of the New York Public Library and became its director.

The old stone farmhouse is now occupied by a Mr. and Mrs. L. D. Plank, who operate a cattle farm. Dr. Curran is hopeful that the farm may ultimately become a memorial to Dr. Billings.

• Science News Letter, 84:30 July 13, 1963

RADIOLOGY

Linear Accelerator Makes Sharp X-Ray Films

► **THE LINEAR ACCELERATOR**, a potent cancer weapon, has been applied to making sharp X-ray films of parts of the body usually obscured by bone.

The technique was developed by Dr. G. M. McDonnell and Theodore Ott of the University of California, Los Angeles, Medical School. It may make possible earlier detection of cancers of the lungs, windpipe and larynx. Tiny cancers have been seen that were not visible on conventional X-ray film. It is also possible to find evidence of certain heart and blood vessel defects with the new procedure.

The less powerful radiation of conventional X-rays is absorbed more by bone than other tissue. Thus bones tend to dominate such X-ray films.

More powerful radiation beams, such as those from a linear accelerator of six million electron volts, are absorbed no more by bone than most other tissue. And in air-containing tissue they are absorbed hardly at all.

Thus X-ray pictures of lungs are in sharper contrast, with little of the rib shadows that dominate conventional chest X-rays. Other structures are more sharply delineated by introduction of air. For example, sharper pictures of the spinal cord occur with injection of air into the spinal column.

Dr. McDonnell said use of the procedure is limited to medical centers where such powerful radiation instruments are being used for cancer therapy. It has already proved a valuable diagnostic tool at UCLA.

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PSYCHOLOGY

Parents on Relief Have Many Unwanted Children

► **WANTED CHILDREN** may be the ones who suffer most when their parents on relief give them unwanted brothers and sisters.

Studies of 25 relief families have shown what happened without family planning.

Nearly half of all their babies were unwanted. The stresses and strains of an overcrowded family seemed to focus on the older wanted children.

The older, wanted children got stuck with baby sitting, pinched for spending money and left without new clothes. They were likely to drop out of school.

Beneath these general problems, Gitta Meier of the University of Michigan has found, lie very real differences in women's ability to control and plan family size.

Three types of women, she explained, have unwanted babies:

1. Nonplanners who accept pregnancy after pregnancy with "nochalant fatalism" and show a deep-seated need for child-bearing.

2. Nonusers of birth control devices whose ignorance, ingrained tabus or unquestioning submission to male preferences keep them from effective family planning.

3. Unsuccessful users, well aware of the consequences of fertility, for whom help with family planning would make the difference between overall success and failure.

The successful users among these women, Mrs. Meier reported in *Eugenics Quarterly*, 10:36, 1963, were too small a group to allow generalization.

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