



### **GEORGIA TECH VIDEO:** **CIVIL WAR MILITARY MEDICINE: CHEMICAL ANALYSIS SHEDS LIGHT ON PAST REMEDIES**

November 27, 1991

A rare discovery on a South Carolina golf course and the latest in chemical analysis have provided scientists with a fascinating look at Civil War medical care.

The contents of "whiteware" bottles unearthed from a U.S. Army field surgeon's refuse pit on Hilton Head Island, South Carolina, were studied by scientists at Georgia Institute of Technology using gas chromatography and mass spectrometry.

Analysis of the bottles' contents -- clear liquid in one and salve material bearing the fingerprints of its last user in another -- confirmed much of what is known about Civil War medicine.

#### **VISUALS AVAILABLE**

**\*Researchers taking samples from vials similar to those found at the site.**

**\*Portion of mass spectrometry and gas chromatography testing processes.**

**\*Site map showing where vials were found.**

**\*Interviews with Dr. Ken Busch, associate professor of chemistry and biochemistry; and Christopher Espenshade, archaeologist, Brockington and Associates.**

The liquid contained arsenic acid. A number of inorganic acids once were used by Army physicians to treat combat wound infections, as well as common fungus infections of the skin, said Dr. Kenneth Busch, associate professor of chemistry and biochemistry. The acid ate away the tissue, removing the affected area.

Another sample showed the presence of elemental sulfur, also used as a disinfectant. This substance might have been an

ingredient in salves used to treat wounds and skin conditions.

The 125-year-old medicines were found during archaeological excavation of an 1864 encampment on Hilton Head Island. The 32nd U.S. Colored Infantry, composed

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of black soldiers recruited from the New England states, stayed at Camp Baird for five weeks while building nearby Fort Howell. Atlanta consulting company Brockington and Associates did the survey work for the Greenwood Development Company, which was constructing homes and a golf course on the site.

To Busch's surprise, the unearthed drug samples did not contain narcotics such as opium and morphine. Such drugs were overprescribed to treat a wide range of medical problems -- including diarrhea, the leading killer of soldiers -- during the Civil War era. Any narcotics might not have been left behind because of their value, or, if discarded, would have disappeared over time.

Other often-used Civil War drugs contained mercury and lead, heavy metals that physicians now know are toxic. Surgeons of that era did have ether and chloroform for anesthesia, but these volatile compounds would not have survived 125 years even in tightly stoppered containers.

But how a wounded or ill Civil War soldier fared was not really a function of caustic remedies like the ones unearthed at Hilton Head. Back then, the soldier either healed by himself or he didn't make it, Busch said.

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***If you are interested in reporting on this research and need more information or missed our Wednesday, November 27 satellite feed, please call Toni Mills at (404) 853-0459 or Lea McLees/John Toon at (404) 894-3444. Dr. Busch can be reached at (404) 894-4030.***